MODERN MEDICINE

The Journal of Diagnosis and Treatment

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Four factors are now recognized in the treatment of peptic ulcer...

1. ***Neutralizing hyperacidity.*** KOLANTYL includes a superior antacid combination (magnesium oxide and aluminum hydroxide, also a specific antipeptic) for two-way, balanced antacid activity.

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4. ***Inactivation of lysozyme*** . . . with a proven antilysozyme, *sodium lauryl sulfate.* Laboratory research[1,2,3] and clinical results[4] indicate that the enzyme lysozyme is one of the etiologic agents of peptic ulcer. By inhibiting or inactivating lysozyme, KOLANTYL—and *only* KOLANTYL—provides the important 4th factor toward more complete control of peptic ulcer.

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1. Meyer, K. et al. Am. J. Med. 5:482,1948. 2. Wang, K. J. and Grossman, M. I. Am. J. Phys. 155:476,1948. 3. Grace, W. J. Am. J. Med. Sc. 217:241,1949.
4. Hufford, A. R. Rev. of Gastroenterology, 18:588, 1951.

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1877 75th

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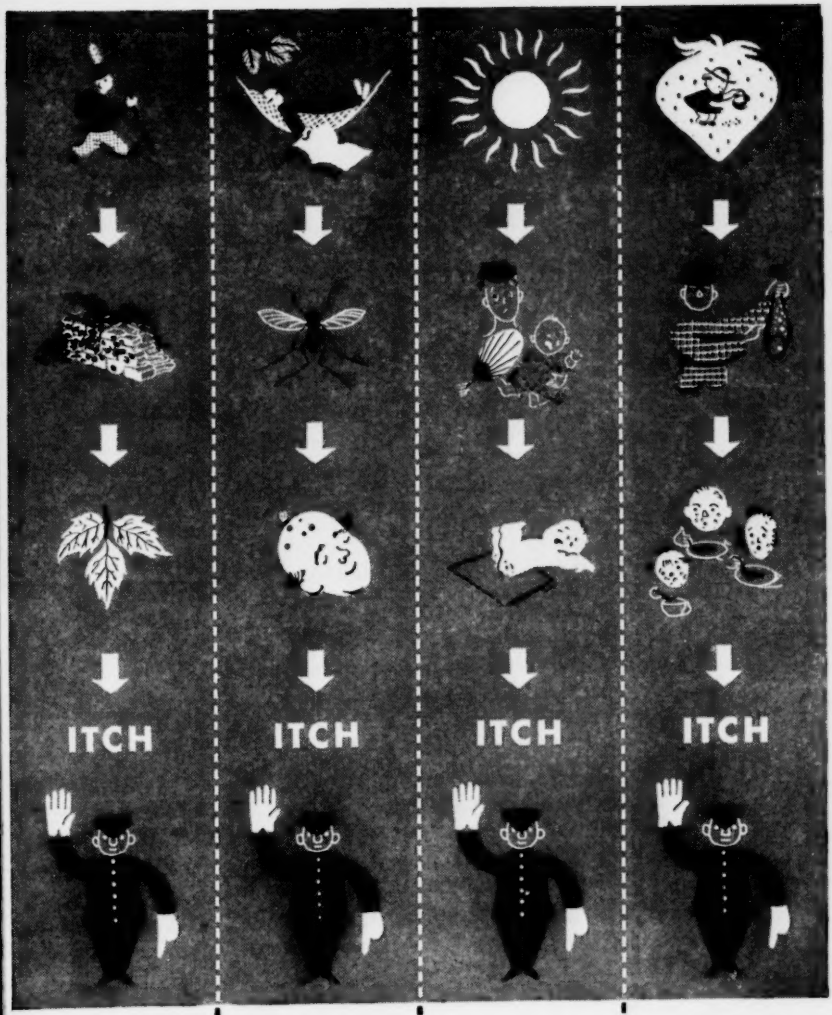

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THE JOURNAL OF DIAGNOSIS AND TREATMENT

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1. *Seley, S. A.: Am. J. Dig. Dis. 13:238 (July) 1946.* 2. *Rossien, A. X.: Rev. of Gastroenterol. 16:34-52 (Jan.) 1949.* 3. *Rossien, A. X. and Victor, A. W.: Am. J. Dig. Dis. 14:226-229 (July) 1947.* 4. *Batterman, R. C. and Ehrenfeld, I.: Gastroenterol. 9:141 (August) 1947.*

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MODERN MEDICINE

THE JOURNAL OF DIAGNOSIS AND TREATMENT

National Editorial Board

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From a recent investigation comes this noteworthy clinical development: topical Pyribenzamine with Zirconium, applied to the skin within one hour after application of *Rhus toxicodendron* extract, "will prevent the development of Rhus . . . dermatitis . . ."[1] Other evidence indicates that this new combination frequently halts spread of existing dermatitis – aids healing – relieves itching, blistering, burning. From Cronk and Naumann:[2] 85% effectiveness in 47 patients treated for *Rhus* dermatitis with Zirconium – a result termed "highly satisfactory." From Carrier *et al.*:[3] topical Pyribenzamine "a very valuable adjunct in the treatment of dermatitis due to plants, especially poison ivy . . ." Pyribenzamine Cream with Zirconium is supplied in 50-Gm. tubes, each containing 2% Pyribenzamine hydrochloride (brand of tripelennamine hydrochloride) and 4% Zirconium oxide (as hydrous zirconia) in a water-washable base. Complete information on request.

1. Cronk, G. A.: Arch. Dermat. & Syph. (In press.)
2. Cronk, G. A., and Naumann, D. E.: J. Lab. & Clin. Med. 37:909, 1951. 3. Carrier, R. E., Krug, E. S., and Glenn, H. R.: Journal-Lancet 68:240, 1948.

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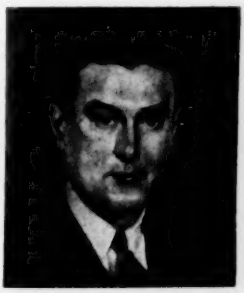
for
July 15
1952

Modern Medicine
Vol. 20, No. 14

THE MAN ON THE COVER is Dr. Jere W. Lord, Jr., of New York City, Assistant Professor of Surgery at New York University Post-Graduate Medical School, Associate Attending Surgeon at the Bellevue and University hospitals, and Attending Surgeon at Gouverneur Hospital. A fellow of the New York Academy of Medicine and the American College of Surgeons, Dr. Lord is also a member of the American Association for the Surgery of Trauma, American Heart Association, and Society of Vascular Surgeons. Among his numerous contributions to medical journals is "The Surgical Therapy of Acute and Chronic Arterial Occlusion," published in the *Bulletin of the New York Academy of Medicine*, upon which the report on page 89 is based.



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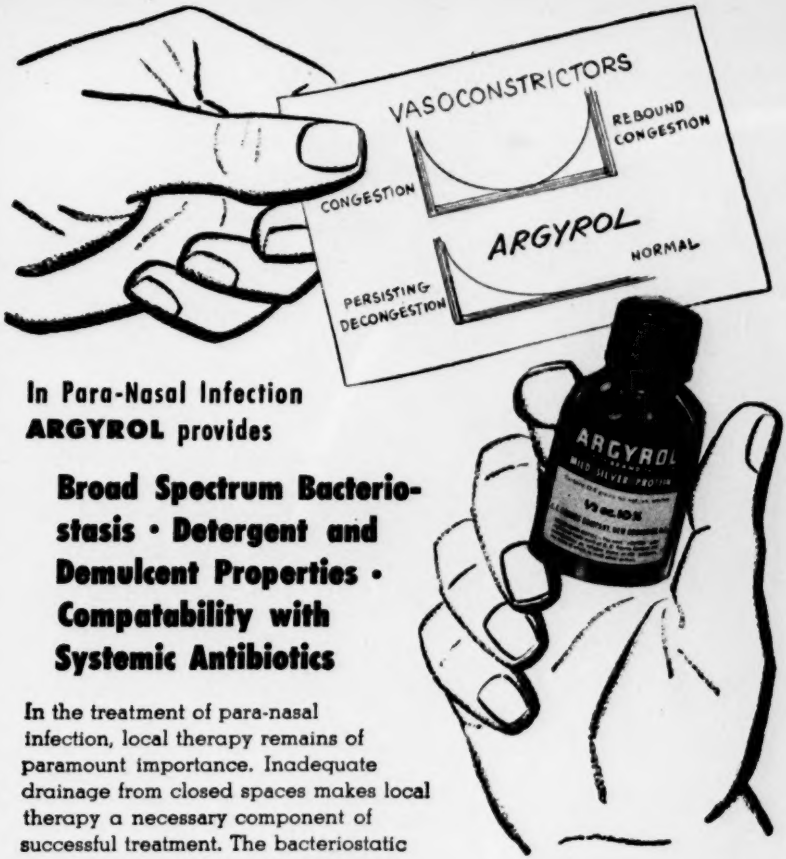

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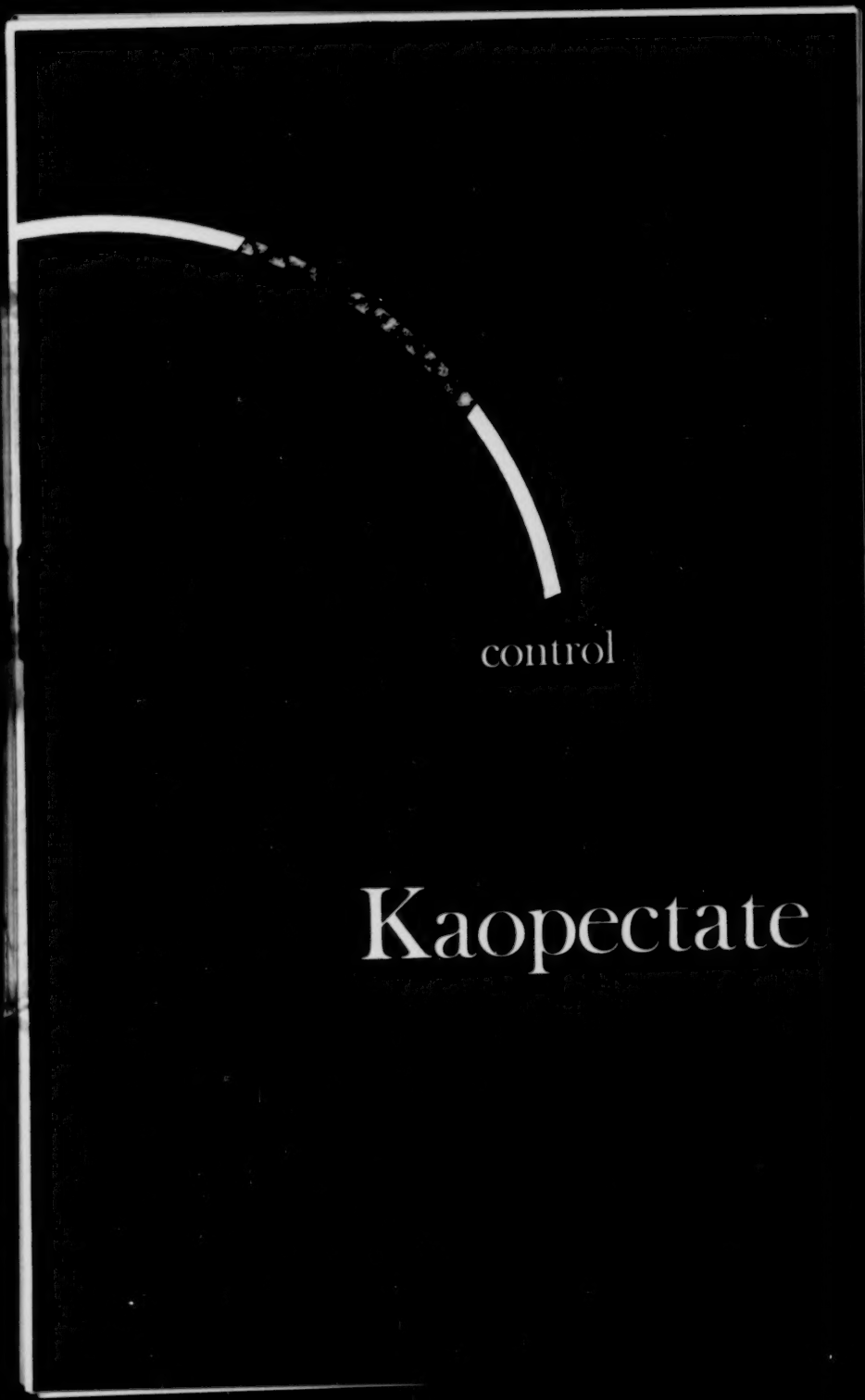
control
Kaopectate

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LETTER FROM THE EDITOR

Dear Reader:

Since the time of Hippocrates, the doctor's chief concern has been the treatment and care of the sick. Through all the years the problem has remained the same, but the methods have changed.

The progress of medical science has been, on the whole, steady, and sometimes spectacular. Yet many of us have a tendency to take its advances for granted. Only a dozen years ago pneumonia was one of the major causes of death. Now a patient rarely dies of this disease. The sulfonamides and antibiotics have given the medical profession the means of effective therapy.

Advances in other fields have been no less spectacular. The attack on crippling diseases has been unrelenting. Continuous research into every affliction of the human mind and body has placed in the hands of the modern doctor measures for alleviating many forms of human distress.

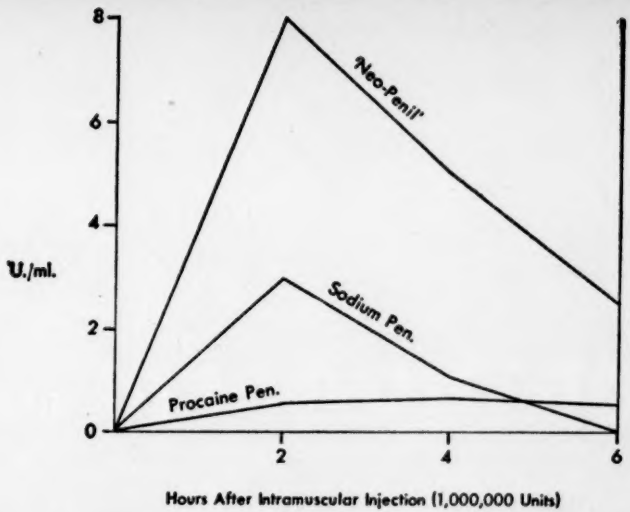
The Editorial Board of *Modern Medicine* has long recognized the fact that it is impossible for the busy modern practitioner to keep informed of every new development in the medical world if he is forced to seek out, amid the mass of periodicals, all the papers in which specialized research is reported. Therefore the Board is constantly seeking to present in brief, concise form the best contemporary thought in the many fields in which medicine is making notable progress.

Walter C. Alvarez

EDITOR-IN-CHIEF

Announcing a new chemical derivative of penicillin which concentrates in the lung and sputum

NEO-PENIL* for aqueous injection



Comparison of average sputum levels in humans, from Heathcote.[1]

'Neo-Penil' is a long-acting injectible penicillin, which not only assures prolonged blood levels, but also gives high concentrations in certain body tissues. For example, 'Neo-Penil' produces high concentrations *in lung tissue* and *in sputum*, and thus offers an encouraging prospect in the treatment of bronchopulmonary disease.

Indications: All infections that respond to repository penicillin.

Available: At retail pharmacies—in single-dose, silicone-treated vials of 500,000 units. Full information accompanies each vial.

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*Trademark for penicillin G diethylaminoethyl ester hydriodide, S.K.F. 1. Lancet *1*:1255 (June 9) 1951.

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dermatoses

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external ulcers

diaper rash

new, effective, faster, safer treatment

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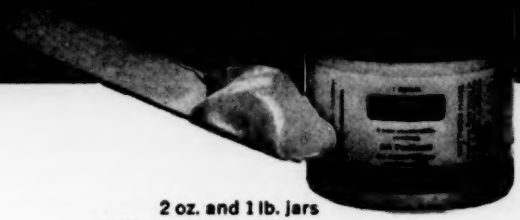

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PLEASANT TO APPLY
non-staining, smooth-spreading;
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first and **only**
topical therapy to contain
panthenol

CLINICALLY EFFECTIVE—
new studies[1,2] show that topical
panthenol (analog of
pantothenic acid) "favorably
influenced the course of various
ulcerative and pyogenic
dermatoses. A majority healed
and many showed various
degrees of improvement."
Even long standing conditions
resistant to other therapy
seem to respond to
Panthoderm Cream which

relieves pain and itching
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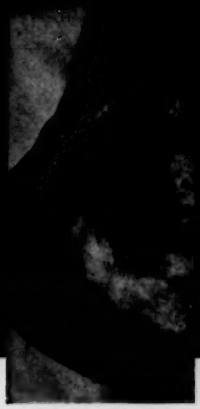
"This preparation
(Panthoderm Cream) showed
clinical evidence of
epithelizing stimulation,
of an *antipruritic effect,*
and of an *antibacterial*
effect...in a variety
of dermatoses."[1]



Varicose ulcer of ankle, large, deep, profuse foul-smelling discharge.

Healing of ulcer after treatment with Panthoderm Cream for 10 weeks.

1. Kline, P. R., and Caldwell, A.: New York St. J. M., May 1, 1952.
2. Combes, F. C., and Zuckerman, R.: J. Invest. Dermat. 16:379, 1951.

Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Eye-saving Type

TO THE EDITORS: The change in type in the April issue of *Modern Medicine* to Times Roman is indeed second only to the material which goes into a publication of this sort. The increased readability of this type makes the medical data additionally valuable in that it relieves the eyestrain which anyone trying to keep up with medical literature must suffer. Congratulations on the change, which further improves your periodical.

LEONARD ROSENZWEIG, M.D.
Grand Rapids, Mich.

Meeting with Addis

TO THE EDITORS: Dr. Alvarez' recent editorial on Dr. Addis interested me very much *(Modern Medicine*, Apr. 15, 1952, p. 69). In 1945 I had the opportunity of meeting Dr. Addis while in San Francisco. He promptly invited me to attend his clinic, which I did three times a week for a period of nine months.

There was real teamwork in the clinic but the patient always had Dr. Addis' personal attention. Never was there the slightest suggestion of assembly-line methods.

Dr. Addis had a fascinating personality. He was a physician, a scientist, a philosopher, and a gentleman. Always accessible, he never hesitated to share his knowledge.

His wife was his dietician; his daughter, his technician; and always present was his granddaughter, who added an undefinable charm to the whole outfit.

He used to say that a physician who does not look at the urinary sediment himself is like a clinician who engages somebody else to percuss the patient's chest.

I remember his peculiar sphygmomanometer, of a type I had never seen before and shall never see again. It consisted of a mercury manometer which he held in one hand, while manipulating the bulb and stethoscope with the other.

His method for determining serum creatinine is easy and fast enough for anybody to perform in the office.

With his death the world lost a great man.

WILLIAM R. BUNGE, M.D.
Laurel, Md.

Steroids and Male Infertility

TO THE EDITORS: Recently, a report of mine on the adjuvant use of various steroids in relative seminal inadequacy in the human, with

(Continued on page 26)

For Vaginal Tract Infections

AVC

IMPROVED
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In
TRICHOMONIASIS
MONILIASIS
MIXED INFECTIONS

AVC Improved is a time tested formula for the treatment and prophylaxis of vaginal tract infections.

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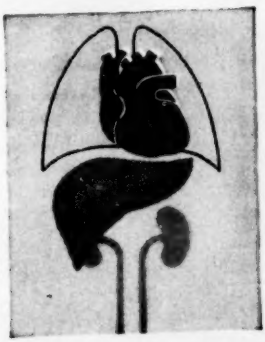

*TRADEMARK APPLIED FOR

NEW safeguard for the "drowning heart." Prescribe in congestive heart failure, recurring edema, cardiac asthma, hypertensive heart disease, dyspnea of cardiac origin, arteriosclerotic heart disease, fluid retention masked by obesity and for patients averse to their low-sodium diets.

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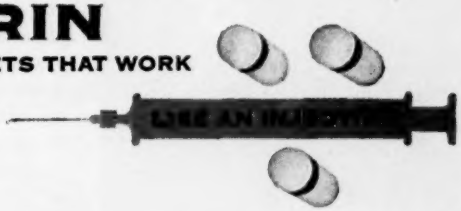

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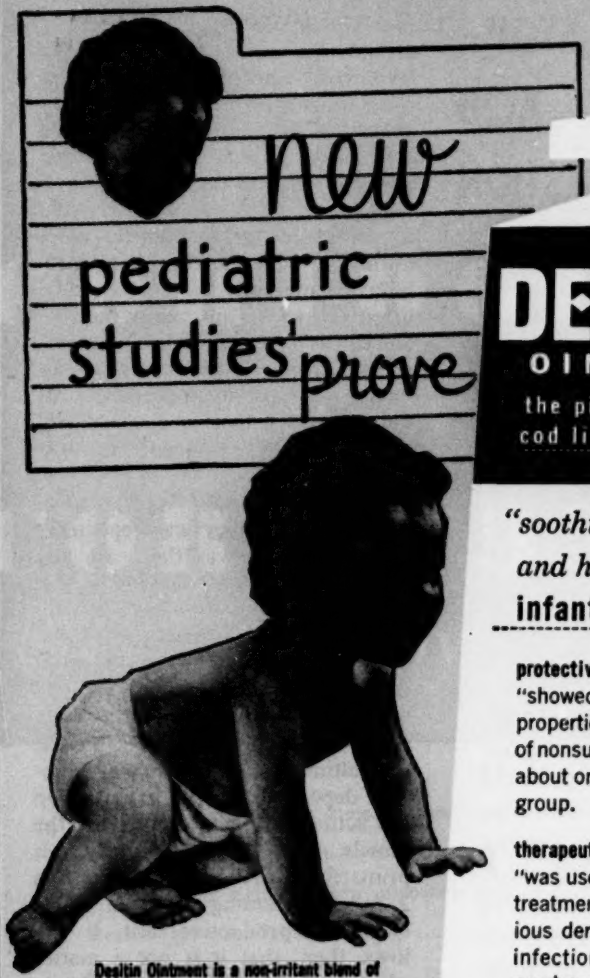
particular reference to pregnenolone acetate, was abstracted in *Modern Medicine* (Mar. 15, 1952, p. 104). Since the original report was published without correction by myself, certain points require clarification.

• The preliminary experimental data in this paper were presented only with the hope that one of the authorities at the Steroid Symposium in Cuernavaca might help explain some of the obvious inconsistencies. For example, we reported that there was apparently no correlation between improvement in sperm population or motility and subsequent pregnancy. About half the conceptions occurred with no change in the seminal picture.

• The question was raised regarding the present-day standards for evaluating the fertility potential of the male on the basis of the tests suggested, for example, by the American Society for the Study of Sterility: [1] liquefaction, [2] sperm population, [3] motility at two, four, and eight hours, [4] live-dead stains, and [5] morphology. In view of the results obtained in this study and the more recent ones of Mc Cleod, none of these methods or

"What my doctor doesn't know won't hurt me."



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- **intertrigo** • **chafing**
- **irritation**

(due to urine, excrement, chemicals or friction)

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70 Ship Street • Providence 2, R. I.

1. Heimer, C. B., Grayzel, H. G., and Kramer, B.: Archives of Pediat. 68:382, 1951.
2. Behrman, H. T., Combes, F. C., Bobroff, A. and Leviticus, R.: Ind. Med. & Surg. 18:512, 1949.

any combination thereof, yields a definitive means of assessing the fertilizing capacity of the human spermatozoa.

Since these methods are far from conclusive, it was suggested that perhaps the value placed upon these tests for evaluation of the semen should be weighed far more critically. Perhaps these admittedly crude methods should be recognized as such. Thus, many men indicted as sterile, or presumably sterile, on the basis of these tests, would not have to undergo one of the greatest cataclysmic emotional storms that the male ego can ever undergo.

• In this report, the term relative seminal inadequacy was repeatedly stressed. As long as there are any normal motile spermatozoa in the ejaculate, pregnancy is possible, regardless of its mathematical probability. In the presence of oligozoospermia (count of less than 20 million per cubic centimeter), irrespective of degree, it was suggested that ultimate conception will probably depend to a great extent upon the actual fertility potential of the female. In essence, infertility is primarily a problem that involves 2 people, teaming up as a single biologic reproductive unit. It follows, then, that it is not a matter of how "normal" is the male or how "normal" the female, rather, the crux of the problem is: *How fertile is this particular couple?*

• In the period of some sixteen to seventeen months since this preliminary report was prepared, our studies with pregnenolone acetate have failed to justify completely our preliminary conclusion that "the results obtained with pregnen-

(Continued on page 32)

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for

CORTISONE

therapy

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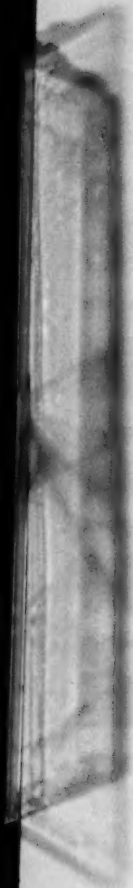

each capsule contains	
VITAMIN A	5,000 U. S. P. Units
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VITAMIN B12	1 mcg.
THIAMINE HYDROCHLORIDE	3 mg.
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NIACINAMIDE	25 mg.
ASCORBIC ACID	50 mg.
CALCIUM PANTOTHENATE	5 mg.
MIXED TOCOPHEROLS (Type IV)	5 mg.
CALCIUM	213 mg.
COBALT	0.1 mg.
COPPER	1 mg.
IODINE	0.15 mg.
IRON	10 mg.
MANGANESE	1 mg.
MAGNESIUM	6 mg.
MOLYBDENUM	0.2 mg.
PHOSPHORUS	165 mg.
POTASSIUM	5 mg.
ZINC	1.2 mg.

"Nutrition must be considered as an entity. No particular constituent is more important than another. Each nutrient should be present in its optimum quantity."[1]

Vitamins alone often fail to correct deficiency symptoms. Minerals and trace elements enable the body to utilize the supplied vitamins. Furthermore, minerals and trace elements are essential components of many enzyme systems which control all metabolic function.

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1. Simonnet, H.: Nutrition in Pregnancy, Canad.M.A.J., 58:556, (June) 1948, p. 560.

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Viterra

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olone . . . warrant further clinical study." First, consistent results which are predictable and reproducible are not obtained. Second, several of the husbands reported in the original series have successfully impregnated their wives at least once since then without any change in the seminal picture and without any therapy except the occasional use of thyroid extract or thyroxin (laevo-thyroxin 0.05 to 0.1 mg. or racemic thyroxin 0.4 mg. daily, dispensed only in gelatin capsules). As was suggested in the original unedited report, the possibility remains that the effects may have been psychosomatic, since the husband could easily assuage his guilt feelings by the fact that something positive was being done for him.

• Furthermore, sufficient weight was not accorded the fact that the fertility potential of the female was maintained at as high a level as possible. Therefore, it is entirely plausible that by making the wife relatively more fertile the relative seminal inadequacy became a relatively sufficient semen, adequate enough to achieve conception. In fact, critical reevaluation seems to point to improvements in the fertility potential of the female as the deciding factor.

A. R. ABARBANEL, M.D.
Los Angeles

"I find myself washing behind my ears and eating my spinach."

Obocell greatly simplifies the ordeal of a reducing regimen in the management of obesity. The unique **double** action of Obocell (1) suppresses bulk (hollow) hunger and (2) curbs the appetite. Obocell also produces a feeling of well-being, thus combating fatigue and irritability which are commonly encountered when food is restricted. Patients on Obocell therapy eat less, do not violate their diet, lose weight and are satisfied and happy.

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Now available OBOCELL LIQUID . . . a new palatable syrup for patients who prefer liquid medication.

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Research to Serve Your Practice

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: What is the procedure for the Master 2-step test for coronary insufficiency? Will you supply me the tables of normal efficiency?

M. D., Ohio

ANSWER: *By Consultant in Cardiology.* The Master 2-step test consists of recording an electrocardiogram after a definite amount of work, standardized for the patient's age, sex, and weight (Tables 1 and 2). Two steps, each 9 in. high, totaling 18 in., are climbed a prescribed number of times by the patient in exactly one and one-half minutes. An electrocardiogram is made immediately on cessation of the exercise and repeated three minutes and then eight minutes later. These tracings are compared to a tracing made before exercise.

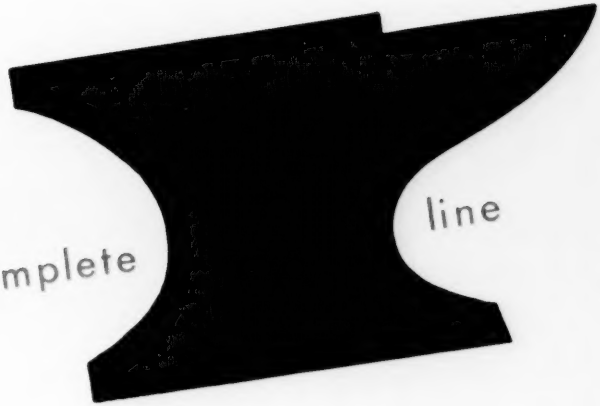
When the standard exercise test gives a negative result, another test is made an hour later or the next day. In the repeated test the patient makes twice the number of

TABLE 1. STANDARD NUMBER OF ASCENTS FOR MALES*

WEIGHT (LB.)	AGE IN YEARS												
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
40-49	35	36											
50-59	33	35	32										
60-69	31	33	31										
70-79	28	32	30										
80-89	26	30	29	29	29	28	27	27	26	25	25	24	23
90-99	24	29	28	28	28	27	27	26	25	25	24	23	22
100-109	22	27	27	27	28	28	27	26	25	25	24	23	22	22
110-119	20	26	26	27	27	26	25	25	24	23	23	22	21
120-129	18	24	25	26	27	26	25	24	23	23	22	21	20
130-139	16	23	24	25	26	25	24	23	23	22	21	20	20
140-149		21	23	24	25	24	24	23	22	21	20	20	19
150-159		20	22	24	25	24	23	22	21	20	20	19	18
160-169		18	21	23	24	23	22	22	21	20	19	18	18
170-179			20	22	23	23	22	21	20	19	18	18	17
180-189			19	21	23	22	21	20	19	19	18	17	16
190-199			18	20	22	21	21	20	19	18	17	16	15
200-209				19	21	21	20	19	18	17	16	16	15
210-219				18	21	20	19	18	17	17	16	15	14
220-229				17	20	20	19	18	17	16	15	14	13

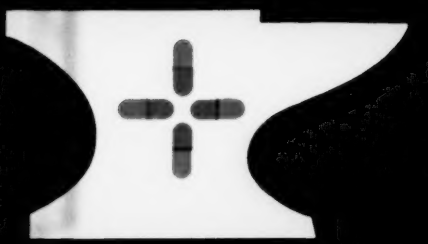
*Tables from *Am. Heart J.* 10:497, 1935.

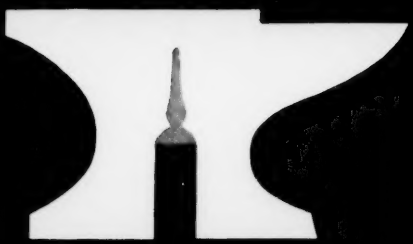
Smith, Kline & French Laboratories **present**



the complete line

the most positive treatments for
the most common deficiencies





fill the physician's every requirement
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TABLE 2. STANDARD NUMBER OF ASCENTS FOR FEMALES*

WEIGHT (LB.)	AGE IN YEARS												
	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
40-49	35	35	33										
50-59	33	33	32										
60-69	31	32	30										
70-79	28	30	29										
80-89	26	28	28	28	28	27	26	24	23	22	21	21	20
90-99	24	27	26	27	26	25	24	23	22	22	21	20	19
100-109	22	25	25	26	26	25	24	23	22	21	20	19	18
110-119	20	23	23	25	25	24	23	22	21	20	19	18	18
120-129	18	22	22	24	24	23	22	21	20	19	19	18	17
130-139	16	20	20	23	23	22	21	20	19	19	18	17	16
140-149		18	19	22	22	21	20	19	19	18	17	16	16
150-159		17	17	21	20	20	19	19	18	17	16	16	15
160-169		15	16	20	19	19	18	18	17	16	16	15	14
170-179		13	14	19	18	18	17	17	16	16	15	14	13
180-189			13	18	17	17	17	16	16	15	14	14	13
190-199			12	17	16	16	16	15	15	14	13	13	12
200-209				16	15	15	15	14	14	13	13	12	11
210-219				15	14	14	14	13	13	13	12	11	11
220-229				14	13	13	13	13	12	12	11	11	10

ascents in exactly three minutes. Thus, the rate of work is the same, but twice the amount is done.

Depression of the RS-T segment more than 0.5 mm. below the isoelectric line or an alteration from a positive T wave to a flat or inverted T wave is considered an abnormal response in the electrocardiogram. Change from a previously inverted T wave to a flat or upright T wave is also abnormal. The RS-T depressions and T-wave inversions are the changes commonly observed.

Occasionally, multiple premature beats, widening of the QRS, deep Q waves, prolongation of the P-R interval, or heart block may occur and these are considered an abnormal response. In ascertaining the level of the RS-T segment, the P-R segment is considered the isoelectric level.

QUESTION: Are thyroid pills, 2 and 3 gr. daily, contraindicated in a middle-aged woman with a small active tuberculous lesion in the apex? The lesion is slowly undergoing fibrosis. Her basal metabolic rate, -22 and -35, probably causes some of her symptoms of weakness and tiredness.

M.D., Minnesota

ANSWER: *By Consultant in Diseases of the Chest.* Daily thyroid extract, 2 or 3 gr., should do no harm. Generally persons with active tuberculosis who have coexisting nontuberculous conditions should have the latter ailments treated in the usual manner. The one exception may be the use of cortisone and ACTH.

Correction

In the May 1, 1952 issue of *Modern Medicine,* Dr. George T. Harrell was incorrectly listed as being a member of the American Orthopaedic Association.

Introducing

a new oral hypotensive

for long-term therapy

Methium

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CHLORIDE (*brand of hexamethonium chloride*)

an autonomic ganglionic
blocking agent
the action of which
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By drug action alone, Methium blocks — almost as effectively as surgical excision — the nerve impulses that produce vasoconstriction through the autonomic nervous system.

The objective of therapy is to administer, in gradually increasing doses over a period of several days to several weeks, enough Methium to lower blood pressure to more normal levels — even, according to some investigators, to the point of mild postural hypotension.

Methium is a potent drug. Care is required in prescribing and adjusting dosage. In successfully treated cases, the results justify the required effort and observations. When the patient is adequately informed and supervised, blood pressure may often be lowered to normotensive levels and symptoms of hypertension substantially reduced.

In Methium, hexamethonium is now available in convenient oral form as the chloride, free of the risks of bromide or iodide intoxication. Available on prescription only in 250 mg. scored tablets in bottles of 100 and 500.

Methium, being a potent hypotensive drug, demands great caution when complications exist. Prescribe only with extreme care in impaired renal function, coronary artery disease and existing or possible cerebral vascular accidents. Complete instructions for prescribing Methium are available on written request or from your Chilcott detail man and should be consulted before using the drug.

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Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: At a murder trial, did the judge wrongfully refuse to permit a psychiatrist to testify on behalf of accused that while the accused was under the influence of Sodium Pentothal he corroborated his own testimony that he did not kill decedent?

COURT'S ANSWER: No.

The New Mexico Supreme Court determined, on consideration of medical testimony and medical authorities presented, that there is scientific disagreement as to the effect and accuracy of so-called truth serums (243 Pac. 2d 325).

PROBLEM: An employee was seriously injured when his clothing was caught by a revolving shaft. A member of the staff of the hospital to which the man was taken called the employer corporation's superintendent and was told to give all needed attention. [1] Was the corporation bound by the superintendent's instructions to the doctor and [2] was the company's liability, if any, to the doctor limited by the provisions of the local workmen's compensation law?

COURT'S ANSWERS: [1] Yes. [2] No.

The New Jersey District Court at Perth Amboy decided that the superintendent, as manager of the plant where the accident occurred, had implied power to bind the company for reasonable medical charges.

The compensation law did not limit the amount for which the company was liable to the doctor because his right to be paid by the company rose out of employment by the company, not by the employee in such sense that the compensation law would apply (160 Atl. 763).

PROBLEM: In the absence of the jury during a murder trial, a doctor was called as an expert witness. The judge dispensed with preliminary questions as to the doctor's qualifications as an expert, saying that he was familiar with them. Accused's lawyer did not object at the time. Was there ground for reversing a conviction of accused?

COURT'S ANSWER: No.

But the New Mexico Supreme Court seems to intimate that had timely objection been made it would have been wrong for the trial judge to dispense with the preliminary showing of qualifications—particularly had the jury been present (243 Pac. 2d 325). Obviously, if a trial judge were to exempt one doctor from showing qualifications and require that another doctor, testifying to a contradictory opinion, be examined as to his qualifications, the jury might be led to suppose that the first doctor's expert knowledge excels that of the other.

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CURAD is elastic, fits skin contours for better protection and can't ravel at edges.

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CURAD is the *only* adhesive bandage available either plain or with new Furacin-Tyrothricin medication.

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One CURAD outlasts 3 old-style cloth bandages—a big economy feature.

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New CURAD dispenser packs of 100 open into convenient desk or wall dispensers. Choice of two bandage sizes: ¾" x 3" $1.10 per 100; 1" x 3" $1.35 per 100. Your supplier has CURAD now.

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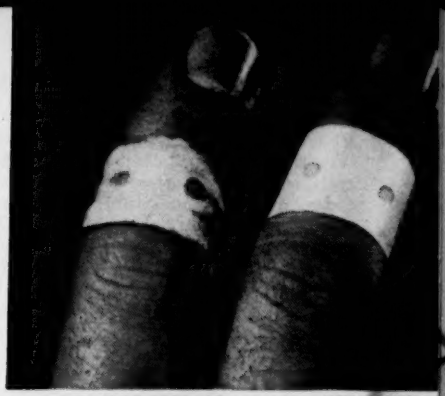
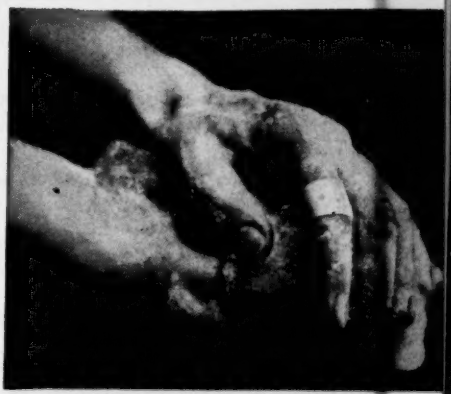


OLD-STYLE BANDAGE NEW CURAD



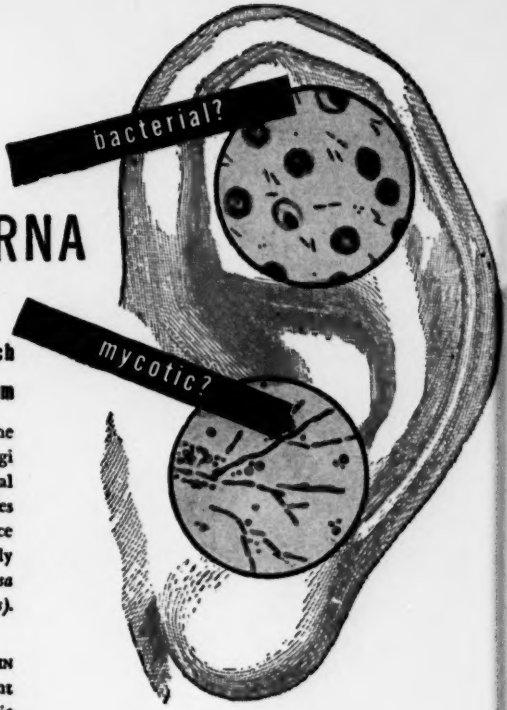
WASH THE BANDAGE AS YOU WASH YOUR HANDS

AS DESK DISPENSER AS WALL DISPENSER

PROBLEM: A doctor was convicted of attempt to abort a patient. He had testified, without contradiction, that he did not have a nurse and that it was not customary among doctors to have one present in examining a woman patient. Was he entitled to a reversal of the conviction and a new trial because the prosecuting attorney repeatedly argued to the jury that doctors usually had a nurse present and that accused's failure to follow that custom implied that he wanted to conceal his improper acts: the trial judge having refused to condemn the argument when accused's lawyer objected?

COURT'S ANSWER: Yes.

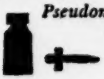
The Nevada Supreme Court reasoned: There being no evidence to show that doctors usually had nurses present in the examination of women patients, it was grossly improper for the prosecuting attorney to assert existence of such a custom, and then, upon that premise, to argue existence of guilty intent through failure to follow the custom. It could not be said, as a matter of common public knowledge, that such custom exists. Even if it be regarded as both prudent and customary for a doctor to protect himself by having a nurse present as a witness, proof of a doctor's failure to so protect himself does not tend to prove improper acts on his part. Possibly, such an inference might be drawn if the doctor had a nurse and excluded her from an examination when custom called for her presence (243 Pac. 2d 264).



OTITIS EXTERNA

a new, two-way approach to a stubborn problem

Opinion has been divided on the nature of common external otitis. Fungi were long regarded as the principal etiologic factor, but recent studies highlight the frequent presence of gram-negative bacilli . . . chiefly *Pseudomonas aeruginosa (B. pyocyaneus).*



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SAMPLES AND LITERATURE ON REQUEST

by living test

Motility recordings from the small intestine (by the multiple-balloon intubation technic*)—plus controlled clinical observations—have demonstrated the superiority of natural belladonna alkaloids (as in Donnatal) over atropine alone, and over the newer synthetics, in relieving smooth muscle spasm with minimal side-effects.

Each tablet, each capsule and each 5 cc. (1 teaspoonful) of elixir contains hyoscyamine sulfate 0.1037 mg., atropine sulfate 0.0194 mg., hyoscine hydrobromide 0.0065 mg. and phenobarbital 1/4 gr. (16.2 mg.)

*Kramer, P. and Ingelfinger, F. J. *Med. Clin. North Amer.* 32:1227, 1948.

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Washington Letter

Reorganization Urged for U. S. Health Services

FOR years there has been general agreement that the federal government's health services, looked at as a whole, are a model of inefficiency. Some of the complaints:

• Under political pressure—and frequently on direct orders from Congress—Veterans Administration builds many hospitals in areas that do not have enough potential patients to justify the projects or in remote sections where professional staffs don't want to serve.

• Too often, military hospitals are built where nearby VA hospital beds are going unused.

• The separate services, civilian and military, pay varying prices for identical items; to a large extent, this condition has been corrected among the military services, but there still is cause for complaint.

• Because of duplicating services, government health programs withdraw too high a percentage of medical personnel from the civilian field.

• Outmoded precedents in some cases result in inefficiency and reduce the quality of medical care offered to patients.

Most experts in and out of government admit that the above conditions should be changed. But they can't get together on how to effect the changes. Currently, and for many years past, several conflicting proposals have been offered, but Congress has declined to order any radical reforms.

In recent years, the Hoover Commission's proposal for a Department of Health has been strongly advocated. It would establish a cabinet-rank health department, with jurisdiction over virtually all the health services. Army, Navy, and Air Force each would be allowed to keep a medical center and to operate its own hospitals

(Continued on page 50)

"Really! Doctor, supposing he did swallow it. Surely it wasn't your only thermometer."

Diarrhea?

SURE, IT IS ONLY A SYMPTOM . . . BUT

The Patient Clamors for Relief

Arobon contains no chocolate; yet, when stirred into milk, it makes a palatable drink of chocolate-like flavor. Adult dosage, 2 level tablespoonfuls in 4 oz. of milk every three or four hours. Children, 1 level tablespoonful in 4 oz. of milk.

ADDITIONAL REFERENCES

Smith, A. E., and Fischer, C. C.: The Use of Carob Flour in the Treatment of Diarrhea in Infants and Children, J. Pediat. *35*:422 (Oct.) 1949.

Kaliski, S. R., and Mitchell, D. D.: Treatment of Diarrhea with Carob Flour, Texas State J. Med. *46*:675 (Sept.) 1950.

Andrews, H. S.: The Use of Carob Flour in Gastro-Intestinal Disturbances, J. Kentucky State H.A. *49*:279 (July) 1951.

Arobon, with its high efficacy in the management of diarrhea, meets the patient's demand for rapid relief.

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In nonspecific diarrheas, Arobon serves well as the sole medication—in all age groups. In infectious dysenteries when specific chemotherapeutic or antibiotic agents may be required, it provides valuable adjuvant therapy, reducing the time required for recovery by as much as two-thirds.[1]

1. Plowright, T. R.: The Use of Carob Flour (Arobon) in a Controlled Series of Infant Diarrhea, J. Pediat. *39*:16 (July) 1951.

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Thiamine Hydrochloride	36 mg.
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(Equiv. to approx. 7 mg. calcium pantothenate)	
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- Patients like Sustinex—in fact they won't believe it's a medicine—
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- Can be added to carbonated drinks—or taken straight—either way it's delightful—

MAY WE SEND YOU A SAMPLE?

overseas, but domestic military establishments would come under the new department, as would all VA medical operations.

However, the plan has enough critics to keep it buried in committee. Each year when they testify the critics point out that even a minority of the Hoover Commission itself filed a report opposing this type of health department.

Another plan—a favorite of President Truman—is to pull up Federal Security Agency, which includes U. S. Public Health Service, to cabinet status, then gradually to reorganize all health services. So far, professional groups have not had much difficulty in stopping this idea.

A third proposal, which has not been pushed actively in recent years, would set up a department or independent agency of health that would not include the military and VA services.

For years, various congressional committees have listened to witnesses argue over the conflicting proposals, but nothing much has happened. Now one of the committees itself—a subcommittee of the Senate Committee on Government Operations—has offered its own idea, and an idea that was applied successfully during World War II.

The subcommittee suggests that a Federal Board of Hospitalization be set up to weed out the most ob-

A Medical "SLEEPER"

How an often neglected field of medicine may improve your practice

There are many indications that the growing field of muscle stimulation therapy has an important place in General Practice. Many alert modern physicians are finding this new field a progressive way to improve their practice. If you have ignored this field the following QUESTIONS & ANSWERS *may provide you with some of the information about muscle stimulation—and how it fits into your practice.*

Questions & Answers

Q: What are its therapeutic applications?

A: Adjunctive to massage to help prevent and treat muscle degeneration that may complicate the following conditions: fractures, nerve inflammations (Bell's Palsy), prolonged chronic illness (hypertension), incapacitating diseases (arthritis), pendulant abdomen due to stretching of the muscles (multiple pregnancies), and many others.

Q: What is meant by muscle stimulation?

A: The stimulation of a muscle motor point by means of an electrical wave of current (MULTITONE) thereby causing a contraction.

Q: What is MULTITONE?

A: MULTITONE is an instrument that can produce a sharp peaked wave (not a sine wave) of electrical impulse. When applied to a motor point it will cause the contraction of innervated voluntary muscle.

Q: Is this the only feature of MULTITONE?

A: No, MULTITONE also has
1. a continuous current
2. fast and slow interrupted currents.
3. a push and pull current.

Q: Is MULTITONE complicated to operate?

A: No, simply follow the Multitone Motor Point Chart and attach the pads to stimulate whatever voluntary muscles you select.

Q: Does it shock the patient?

A: No, MULTITONE is operated on less than 5 milliamperes of current. There is a minimum of unpleasant sensation. Most patients enthusiastically request further treatments and say they feel exhilarated.

Q: Is muscle stimulation and MULTITONE worth the expense?

A: Besides the clinical improvement in your patients' condition MULTITONE will add to your practice an entirely new source of income that has been neglected. Doctors have discovered that MULTITONE can pay for itself in a few weeks. Three convenient payment plans are available.

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jectionable practices without bringing all health departments under one administrative roof.

The President would appoint 4 members of the 10-man board, including the chairman, from private life, and 6 members to represent Defense Department, Interior, VA, Budget Bureau, U. S. Public Health Service, and General Services Administration, the federal government's "housekeeping" department.

The board would be limited to an advisory role, but the bill itself sets up procedures giving reasonable guarantees that any sound recommendations would have to be put into operation by the agencies concerned. For example, the board would supply recommendations, supported by evidence, to the President as well as to the head of the agency. Also, it would report regularly to Congress on its recommendations and what was or was not being done to carry them out.

The legislation appears to have enough teeth extracted to reassure critics—yet sufficient remaining teeth to take a few bites in places where bites are most needed. At any rate, this is the strongest piece of legislation on the subject that has much chance of passage in the next few years. With bipartisan support, there is even some possibility that the legislation will get through Congress this year.

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Washington Notes

For the current fiscal year, the United States will pay about 40% of World Health Organization's budget, or just a few thousand under the $3 million limit set by Congress.

FSA Administrator Oscar Ewing again is swinging hard for the Truman-Ewing health plan, which the administration describes as national health insurance and American Medical Association calls socialized medicine. In a recent talk to a labor group, Mr. Ewing said: "The honest, decent medical practitioners were compelled under threat of expulsion to contribute two million dollars to a smear campaign [against the Ewing plan]. . . . I doubt if the medical autarchy will be able to tax its members anew for another campaign against the health of the people."

Latest available figures from Bureau of Labor Statistics indicate a 12.6% increase in hospital costs. Much of the increase represented raises some hospitals had put off until the first of the year. Physicians' fees went up slightly less than general medical care costs.

A Health Commission panel (Dr. Magnuson, chairman) came to the conclusion that administrative shortcomings, not lack of money, were most seriously re-

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Glycerinated elixir of chloral hydrate compound

. . . a change from the barbiturates

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1. Batterman, R. C.: Modern Medicine, 19:59 Dec. 15, 1951.

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tarding medical research. The experts agreed that better means must be found for recognizing promising investigators and that grants to individual workers should be increased to realistic levels.

Veterans Administration is attempting to learn if a nationwide pharmacy residency program should be set up for its hospitals. A pilot program has been organized and is under way in Los Angeles.

A committee of outsiders has been appointed to help U. S. Public Health Service conduct its study of public health nursing problems.

Starting in January 1954, truck drivers engaged in interstate commerce, totaling about a million, will have to be examined physically every three years. Higher standards also have been set, particularly for eyesight and hearing. Hearing aids will no longer be permitted in passing the test.

The House has before it a bill authorizing payroll deductions of federal employees, including the military, for payment of life and hospitalization insurance. This had been suggested by Blue Cross representatives in lieu of an Emergency Maternity and Infant Care program (EMIC), to assist wives and children of enlisted men.

New legislation authorizes military services and Veterans Administration to transfer hospitals; actually, this has been going on for years, but the administrative procedure was slow and cumbersome.

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*Rehfuss, M. E., Indigestion, Philadelphia, W. B. Saunders Co., 1943, p. 322

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and other medical specialists may be commissioned in the Regular Army, Navy, and Air Force and obtain all the benefits received by male officers. Until passage of the bill, women could serve as medical officers, but only as reserves, and there was little career appeal.

Public Health Service says that 3 of its investigators have developed technics which "may lead to a routine blood test for detection of early hardening of the arteries and at the same time provide physicians with a blueprint to counter defects in blood which cause the condition."

Still unsettled is the question of how, or whether, medical students will be deferred from reserve obligation while they are attending school and during their internship, if Universal Military Training is instituted in the future. Professional organizations want the men withheld from service in the reserves until after internship.

Dr. Louis H. Bauer, new president of American Medical Association, is continuing many of his other outside activities, including chairmanship of a consultants conference to the Air Force Surgeon General. An authority on aviation medicine, Dr. Bauer is editor-in-chief of the *Journal of Aviation Medicine*.

National Bureau of Standards has published a handbook on radiation protection, titled *X-Ray Protection Design*. The booklet is available at Government Printing Office, Washington, D. C., for 15¢.

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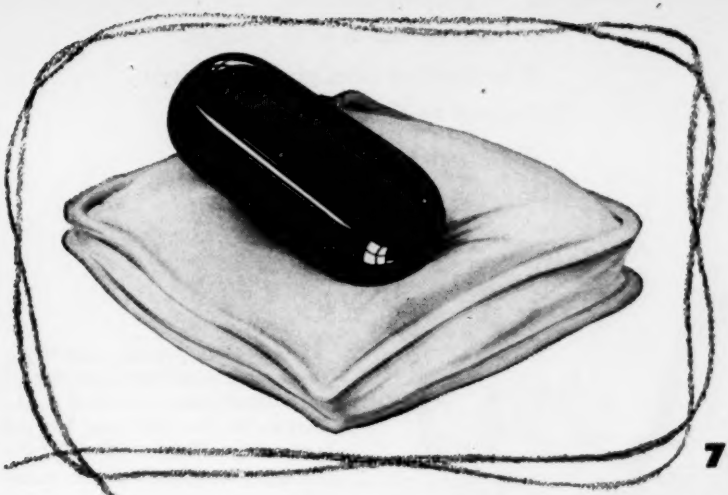

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Brain Injury

in myocardial infarction

A Modern Medicine Editorial

In innumerable cases today, what is called a heart attack probably is thrombosis in some blood vessel of the brain. The reason for believing this is that commonly the further course of the illness of the patient is not that of a person with heart disease; his cardiac reserve remains good, angina pectoris does not develop, and his electrocardiogram is essentially normal. Instead, his symptoms suggest an injury to the brain. He may no longer be able to work, he may have become irritable and forgetful, and he may peter out with a cerebral death.

There are other cases in which a cardiac thrombosis is followed by pains in the shoulder and left arm, suggesting some injury to the nervous system. Of late a number of clinicians have reported such things and have tried to figure out how they could be produced.

In many of these cases, my hunch has been that, associated with a coronary thrombosis, was another small thrombosis in the brain which would account for the causalgic pains in the arm, together, perhaps, with trophic changes and some loss of function in the arm and hand.

In some cases the autopsy has shown vascular injuries not only in the heart but also in the brain. Such coincidences have been reported by Race and Lisa *(Am. J. M. Sc.* 210:732-737, 1945) and others.

Recently, Seymour L. Cole and Jerome N. Sugarman have reported a number of cases which show that an acute myocardial infarction can produce signs suggesting serious injury to the brain, even when at autopsy the pathologist is unable

to demonstrate hemorrhages or infarctions (*Am. J. M. Sc.* 223:35-40, 1952). What he finds often is edema of the brain. It is curious that in 3 of the reported cases hemiplegia was noted. These patients all had cerebral arteriosclerosis and it may be that serial sections would have shown enough small thrombotic injuries on one side of the brain to account for the signs of focal injury.

The authors concluded that coma, convulsions, and hemiplegia can be the only symptoms of an acute myocardial infarction. Actually, it should not surprise anyone to hear that, with a cardiac infarction and especially one that soon results in death, the circulation of the brain is seriously impaired. We all know that the brain is highly sensitive to any failure in circulation. Certainly, ischemia or anoxia of the brain can occur when blood flow is diminished, as following a fall in blood pressure. Several cases have recently been reported of infarction of the brain following a too rapid reduction of blood pressure with one of the new powerful drugs.

WALTER C. ALVAREZ

Addis' Method of Urine Examination

In Dr. Thomas Addis' interesting book on glomerular nephritis,* he remarks on the first page that, commonly, when a doctor becomes concerned, as he so often does, over the report of "2 plus albumin" in the urine, "the most searching history and the most exhaustive physical examination fail to reveal any abnormality" that he can link with the proteinuria. What, then, is he to say to the patient? What is wrong with the kidneys and how much damage has been done to them? Is the disease continuing or has it stopped?

Addis believed that much information could be secured if only the doctor himself would make some tests. The average doctor depends largely on two things: one, the rate of urinary excretion, and the other, the specific gravity, but "no measurements give less precise or more ambiguous results than these two."

The volume of urine most certainly has no relation to the rate

*Thomas Addis, *Glomerular Nephritis: Diagnosis and Treatment*, The Macmillan Company, New York City, 1950.

of glomerular filtration except when, after some clinical disaster, it approaches the zero point, and the specific gravity can change greatly with the intake of water.

"If the doctor wants to learn something about a patient with Bright's disease *he must himself look at the urine.*" But we doctors do not know how to look at urine. It is years since Addis showed how much can be learned from looking at a patient's urine with a certain technic; as yet probably not 1 in 5,000 of us uses Addis' methods or has ever heard of them. This is unfortunate. I remember his showing me the brown or red urine of a child with acute glomerular nephritis, and saying, "There's the diagnosis at a glance."

First, Addis pointed out that if one examines a highly concentrated specimen of urine voided in the morning, after eight hours of sleep, one may find albumin grade II, many casts, and millions of erythrocytes and leukocytes. But let the man return for a test at 2 P.M. and one may find only a faint trace of albumin, an occasional cast, and no red blood cells. Now, surely, the condition of his kidneys cannot have so suddenly cleared up. No pathologist could accept such a thesis; besides, the next morning the urine will look bad again.

What then happened at 2 P.M.? The answer is that the man had a bottle of beer with his luncheon; hence, an hour later, at the height of his diuresis, he had a dilute urine. Addis showed that the rate of excretion of albumin was constant, while the rate of excretion of water was very variable. He found he could easily produce a 50-fold increase in the concentration of protein in the urine by getting the patient to stop drinking water and thus greatly reduce the volume of his urine.

Because of these big variations in urine and its sediments, Addis worked out methods for dealing with samples of urine that would always be comparable. He learned to deal with *rates of excretion* of substances rather than with their *concentrations* in the urine. He showed, also, that with the influx of much water into the urine, most casts are dissolved and the red blood cells are laked. If one expects to see casts and erythrocytes, one must examine concentrated urine.

Eventually, Addis worked out a method of counting with a hemocytometer plate the actual numbers of casts and blood

cells in a tiny drop of concentrated urine, and then expressing them as numbers per twenty-four hours. These figures often gave him a good idea of the status of disease in the kidneys. When red cells entirely disappeared from a person's urine, he would conclude that the patient's glomerular nephritis had healed.

Addis found that healthy persons with normal kidneys in twenty-four hours put out in the urine 2,000 hyaline casts, 130,000 red blood cells, 650,000 epithelial and white blood cells, and 10 mg. of protein.

A night urine of 500 cc. which contains 1,000,000,000 red blood cells looks brown, if acid, and blood red if neutral or alkaline. On looking at such urine, one would think that the patient was losing a lot of blood, but he isn't. He is losing only a drop of blood, or about 0.2 cc. Every day he can lose tens of millions of red cells in his urine and not have it color this fluid. Interestingly, then, the anemia of some nephritic patients is not due to the amount of blood they are losing in the urine.

In cases in which the patient's proteinuria was pronounced, Addis measured the amount of protein being lost every twenty-four hours. I can remember his excitement when he began to find that some edematous patients were losing more protein in their urine than the doctor was allowing them in their diet! After that he not only gave such patients the amount of protein needed by a healthy person but he added enough to compensate for what would be lost in the urine. It was this discovery of Addis' that, overnight, changed the dietary handling of patients with large albuminuria and low levels of serum protein.—W.C.A.

Notes off the Cuff

At the American Society for Anesthesiologists meeting in Washington, a new local anesthetic, 2-chloroprocaine, was announced. It is said to be faster and effective for a longer time than procaine. At the same meeting a new antidote for morphine poisoning was reported, N-allyl-normorphine. When given after large doses of morphine or Demerol, stimulation of breathing and circulation is said to be dramatic. The drug also may counteract the effects in babies of the sedatives given the mothers in childbirth.—W.C.A.

Conservative therapy, without analeptics or laryngeal intubation, is recommended in barbiturate poisoning.

Poisoning by Barbiturates

S. LOCKET, M.B., AND J. ANGUS, M.B.
Oldchurch Hospital, Romford, England

ATTEMPTED suicide by taking barbiturates is an increasing problem, but the victim can usually be saved if treated like any patient recovering from anesthesia.

If the admission staff is acutely aware of the importance of immediate therapy and good nursing care is available, patients with barbiturate poisoning can be treated in the ordinary general medical wards of any large hospital.

Using a simple regime including neither analeptics nor prolonged laryngeal intubation, S. Locket, M.B., and J. Angus, M.B., report that only 2 deaths occurred in 64 cases of barbiturate poisoning.

Gastric lavage with 2 pt. of normal saline or tap water is done on admission, even if the patient is unconscious, since large quantities of barbiturates and stomach contents are sometimes removed. In spite of theoretic objections to lavage, pulmonary lesions were not produced in any of the 64 cases.

As a protection against bronchopneumonia, the patient receives 500,000 units of penicillin by intramuscular injection every six hours until conscious for forty-eight hours.

Oxygen is given continuously by B.L.B. mask, Tudor Edward spectacles, or double nasal catheter to ameliorate pulmonary edema. At least 10 liters of oxygen per minute is the best rate of flow, but this cannot be achieved except with a mask. Oxygen is continued until respiration is normal, cyanosis has permanently disappeared, and consciousness is fully restored.

No chest-thumping is practiced, because regular nursing procedures, including turning of the patient at least every two hours and routine care of the mouth, skin, and pressure points, are safer and more effective.

Great care should be taken to ensure an adequate airway until the patient is fully conscious and oriented. An experienced nurse must be constantly in attendance.

Should coma last more than twenty-four hours, fluid loss is made up by intravenous 5% glucose saline, 1 liter in twenty-four hours. When the quantity of urine voided appears normal, precise attention to fluid balance as indicated by the blood-urea, alkali reserve, and serum-sodium and serum-chloride is not considered essential. Catheterization of the bladder is necessary for unconscious and for some stuporous patients.

Of the 51 female and 13 male

Poisoning by barbiturates. Lancet 262:580-582, 1952.

patients, 20 were conscious when admitted to the hospital; 21, stuporous—rousable temporarily by unpleasant stimuli; and 23, comatose—unconscious with diminished reflexes and low blood pressure and unrousable.

Phenobarbitone was taken in 40 cases and amylobarbitone (Sodium Amytal) in 11. Drugs in the other cases were sodium barbitone, soluble pentobarbitone (Nembutal), sodium propylmethylcarbinylallyl barbiturate (Seconal), butobarbitone (Soneryl), and cyclohexenylethyl barbituric acid (Phanodorm). The nature of the barbiturate was unknown in 1 case; 3 patients took a combination of two drugs.

A patient recovered after taking 100 gr. of phenobarbitone and many had taken as much as 60 to 75 gr. The greatest dose of sodium iso-amethyl barbiturate with survival was 200 gr. Another patient lived who had taken 99 gr.

Diagnosis of barbiturate intoxication can be very difficult unless suspected in every case of coma and stupor. For purposes of diagnosis and treatment, barbiturates can be divided into three groups according to duration of action: [1] those cleared slowly by the body, requiring at least six hours for excretion—phenobarbitone, barbitone, and allobarbitone; [2] those excreted in less than four hours—pentobarbitone, cyclobarbitone, and iso-amethyl barbituric acid; and [3] those cleared rapidly and destroyed by the body within an hour, such as hexobarbitone and thiopentone.

Barbitone and phenobarbitone are especially dangerous because of the prolonged coma; but, since these drugs are slow acting, a larger number of patients are conscious upon arrival at the hospital.

Whatever the degree of consciousness, depth of coma and absence of reflexes alone should not be used as criteria of severity. Older patients are more likely to have serious toxic symptoms, and the presence of liver or kidney disease adds a hazard. Loss of consciousness to the point of coma, with absence of reflexes, indicates a more serious degree of intoxication after phenobarbitone or barbitone consumption than if pentothal or sodium iso-amethyl barbiturate has been taken.

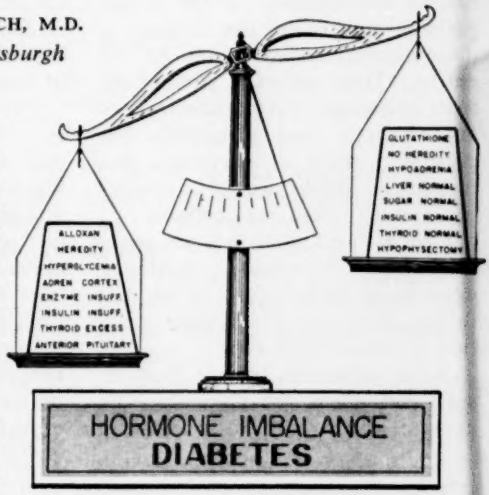
¶MALARIA AND AMEBIASIS are prevented in endemic areas by a bismuth-arsenic preparation combined with an aminoquinoline compound. From ½ to 2 tablets, each containing 250 mg. of Milibis and 75 mg. of Aralen, are administered to children under 6 years, and 3 tablets to older persons, on two consecutive days each week. In a banana labor camp near La Lima, Honduras, Mark T. Hoekenga, M.D., reports that 201 people were protected by such therapy from both types of illness, whereas 28 of a similar nontreated group became ill. Positive results from stool tests for amebae were reduced from 36 to 3% for the treated individuals.

J. Lab. & Clin. Med. 39:267-270, 1952.

Available facts in present knowledge of the diabetic state point to hormonal imbalance as a governing factor.

Physiopathology of Diabetes Mellitus

JOSEPH H. BARACH, M.D.
University of Pittsburgh



ALTERATIONS in the flow of hormones from the pituitary, adrenals, thyroid, or pancreas may be sufficiently great to disrupt normal function of enzyme metabolism. Abnormalities in the oxidation and storage of glucose and glycogen follow and ultimately result in diabetes.

Evidence is accumulating to establish the importance of hyperglycemia as a cause of diabetes, observes Joseph H. Barach, M.D. In order to prevent or delay the onset of diabetes, the insulin-producing cells should be allowed to rest. The prevention or control of hyperglycemia by diet, adequate insulin dosage, and avoidance of all known hyperglycemic factors, of whatever origin, is very important. In animals, for example, diabetes induced by continuous hyperglycemia can be ameliorated by allowing the blood sugar to drain off by means of phlorhizin glycosuria.

The pancreatic beta cells are abnormal in 87% of diabetic patients, and the average insulin content of the pancreas is 25% of normal, approximately 50 units per pancreas. Even a histologically normal-appearing beta cell may be functionally inadequate, however, because of inefficiency, fatigue from overwork, and toxic effects. Hypoglycemia, induced by excess insulin, and continued for three to eight months, will produce low insulin content in the pancreas. A long-continued high-fat diet, particularly with excessive animal fats, causes degranulation of beta cells.

The beta cell granules probably represent insulin or the precursors of insulin. Beta cells synthesize insulin out of certain amino acids, such as cystine and methionine. Since cystine is a constituent of insulin and glutathione, an adequate

Modern concepts of the physiopathology of diabetes mellitus. Am. J. Digest. Dis. 19:61-66, 1952.

protein diet may be especially important for the diabetic.

The glycosuric effects of 17- and 11-corticosterones have been demonstrated. When ACTH is administered, endogenous ACTH is depressed, and after the dosage is discontinued, deficiency of ACTH ensues. Then, pituitary adrenal activity is inaugurated, corticosterones are released, and glycosuria occurs as a result of enzymatic disturbances which disrupt carbohydrate and protein metabolism.

Observations show that the hexokinase reaction in muscle or kidney extracts of diabetic rats is no different from the hexokinase reaction in nondiabetic rats.

Some observers believe that insulin influences the glycogenolytic cycle of the liver by a mechanism other than a direct effect on the enzyme systems. Exogenous insulin may have a temporary depressing effect on the beta cells, since insulin introduced into the blood stream causes temporary hypoglycemia. Stilbene is reported to be capable of increasing production of endogenous insulin.

Further elucidation is needed on the role of obesity; on errors in uric acid metabolism; on the significance of the protective effect of glutathione, coconut oil, and corn oil against the destructive effect of alloxan; on the potentialities of a liberal protein diet in providing insulin-producing materials; on the importance of impaired glucose tolerance in vitamin C deficiency; and on the good effects of thiouracil in experimental diabetes.

Cortisone and Gold for Chronic Arthritis

HARRY E. THOMPSON, M.D., AND HAROLD J. ROWE, M.D.

CONCURRENT therapy with gold and cortisone apparently produces better results in chronic rheumatoid arthritis than either agent used alone.

The combination diminishes gold toxicity, yet complete remissions occur as frequently with gold alone. With the combined treatment, the patient's functional capacity increases rapidly so that rehabilitation is possible before the gold becomes effective. When the response to gold begins, the hormone may be discontinued with less danger of relapse.

Harry E. Thompson, M.D., and Harold J. Rowe, M.D., of Tucson emphasize that gold and cortisone should be started together since complete remissions do not occur when cortisone is simply added to chrysotherapy that is already under way. Moreover, in such cases, when the hormone is stopped, the patient's status reverts to the condition before cortisone.

Cortisone and gold therapy in chronic rheumatoid arthritis. Ann. Int. Med. 36:992-1000, 1952.

Urine specimens collected under set conditions of position and activity differentiate various types of albuminuria.

Benign and Pathologic Albuminuria

S. EDWARD KING, M.D.
New York University, New York City
CHRISTIAN GRONBECK, JR., M.D.
Joint Military Mission, Turkey

EXHAUSTIVE tests often not worth the trouble involved are sometimes used when albuminuria is found in apparently healthy people.

A standard routine adopted for military screening is both simple and accurate in distinguishing underlying factors. Consecutive urine samples are collected for twenty-four hours under set conditions of fluid and dietary restriction, body position, and activity. Detailed procedures are used if required.

Albuminuria was discovered in 2,500 of 120,000 draftees at induction centers, or about 2%. S. Edward King, M.D., and Lt. Col. Christian Gronbeck, Jr., M.C., U.S.A., examined 600 of the affected men in the hospital.

The condition was benign in 90% of the entire series of 2,500 men. Benign types were classed chiefly as [1] transitory or [2] postural. The pathologic forms were listed as [1] persistent albuminuria without overt disease, [2] chronic glomerulonephritis, and [3] chronic pyelonephritis.

At the Army induction stations, urine was collected at various times of day and examined for albumin by the turbidimetric method. If albumin was found, examination was repeated on the same day. The case was considered nonpathologic when 1 sample contained normal sediment and no albumin.

Transient albuminuria failed to reappear in about 75% of cases, but 600 subjects were referred to the hospital because albumin appeared in 3 specimens on two days.

The first sample of urine in the hospital was obtained at 8 P.M., the patient was put to bed, and fluids were restricted until morning. The second sample was pooled from 8 P.M. to 6 A.M. for the Addis count and concentration test.

A glass of juice or milk was taken in bed between 7 and 8 A.M. The recumbent position was maintained for the next two hours, and a third specimen was collected. Lordotic position with pillows under the back was tried but produced albumin in very few cases and was given up.

After the third sampling the subject arose, and the fourth specimen

Benign and pathologic albuminuria: a study of 600 hospitalized cases. Ann. Int. Med. 36:765-785, 1952.

was taken after lunch. Upright lordotic position was employed in some cases and proved impractical.

Benign albuminuria was seen in 61.5% of hospital cases, being transitory in 24.5% and postural in 36%. A few cases were unclassified.

Pathologic albuminuria, which accounted for 38.5% of the hospital series, was the persistent asymptomatic type in 23% of instances. Glomerulonephritis was seen in 7% and pyelonephritis in 8.5%.

Transitory benign involvement, apparently the most common type of albuminuria, is irregularly recurrent or cyclic and usually psychogenic. In predisposed individuals with labile nervous and vasomotor systems, stress of different kinds constricts renal vessels, and albumin is excreted during subsequent vasodilatation.

The basic cause of postural albuminuria is probably a congenital defect involving the renal parenchyma or its vessels on one or both sides, or even the portal circulation. Blood supply and function are then impaired by postural changes causing strain, such as lordosis, standing erect, or active movement.

Both transient vasospastic and postural organic conditions may involve actual though temporary renal lesions. Although the exact site of albumin loss into urine is controversial, much evidence implicates the renal tubules and their reabsorptive functions.

Persistent albuminuria, the most common pathologic type, is not a single entity but due to latent or very slowly progressing lesions. Congenital nephropathy, healed glomerulonephritis, obscure pyelonephritis, trauma, obstruction, calculi, arteriosclerosis, or amyloidosis may be responsible. In half the cases, albumin is passed for years without change in kidney function.

Albuminuria in young people is increasingly due to pyelonephritis, which is associated with hypertension in one-third of cases. Since pus may be intermittent and albumin variable, diagnosis is often difficult.

Chronic glomerulonephritis, the least frequent source of pathologic albuminuria, is becoming relatively rare.

¶ LIPOPROTEIN MOLECULES that transport cholesterol are decreased in serum and atherosclerosis is minimized in both human subjects and cholesterol-fed rabbits by administration of heparin. A single intravenous injection of 20 to 100 mg. may relieve angina pectoris for three to ten days. A large series of coronary cases was observed for twelve to eighteen months by Thomas P. Lyon, M.D., and associates of the University of California, Berkeley. Low-fat diets diminished lipoproteins with ultracentrifugal migration rates of 10 to 20 Svedberg units and also lowered the incidence of myocardial infarction.

Arch. Int. Med. 89:421-427, 1952.

Changes in the cardiovascular system occur in myxedema, causing heart damage and circulatory insufficiency.

Myxedema and the Cardiovascular System

LAURENCE B. ELLIS, M.D., J. GILMER MEBANE, M.D., GEORGE MARESH, M.D., HERBERT N. HULTGREN, M.D., AND RICHARD A. BLOOMFIELD, M.D.
Boston City Hospital and Harvard University, Boston

THE effect of myxedema on heart and circulation varies, but cardiac output is diminished and peripheral resistance in systemic circulation is increased.

Judged in conjunction with the development of cardiac enlargement and of electrocardiographic abnormalities, these manifestations are evidence of heart damage and of circulatory insufficiency, believe Laurence B. Ellis, M.D., J. Gilmer Mebane, M.D., George Maresh, M.D., Herbert N. Hultgren, M.D., and Richard A. Bloomfield, M.D., who studied the circulation of 5 patients with myxedema.

Cardiac output is apparently diminished in every instance of myxedema. In 3 cases, this reduction paralleled the decreased oxygen consumption but occurred without increase in the intracardiac pressures as may appear in heart failure. In the other 2 patients, the reduction of cardiac output was out of proportion to the decrease in oxygen consumption, and the absolute levels were of the order usually seen with severe heart failure or shock.

Evidence that the cardiovascular disturbance in 1 patient was caused by myxedema was shown when, during thyroid treatment, the heart size and electrocardiographic abnormalities were corrected and the usual relationship between blood flow and oxygen consumption was reestablished.

Of the 4 patients whose circulating blood volumes were measured, 3 had a reduction below the average normal figures while hospitalized with myxedema; plasma volumes were also low. Velocity of blood flow was retarded in 1 of 3 patients measured, but in the other 2 the velocity was at the upper limit of normal.

In every case, peripheral resistance in the systemic circulation is increased in patients with myxedema, but thyroid therapy promptly relieves the elevation in systemic blood pressure.

Because myxedema produces alterations in cardiovascular dynamics and any degree of associated coronary atherosclerosis may also affect cardiac function, a variety of clinical patterns may appear in untreated myxedema and during therapy. Thus cardiovascular insuffi-

The effect of myxedema on the cardiovascular system. Am. Heart J. 43:341-356, 1952.

ciency may be produced by myxedema and be relieved by thyroid therapy, and coronary insufficiency may subsequently develop when the increased demand for oxygen cannot be met because of coronary narrowing from arteriosclerosis.

The manifestations of cardiac insufficiency in myxedema differ in many respects from those usually encountered in congestive failure. The clinical and physiologic manifestations of heart failure commonly seen are dependent in a large part on the fact that a greater strain exists on one side of the heart, usually the left ventricle, than on the other. In myxedema, the entire myocardium is presumably affected, and both ventricles may dilate and fail to maintain an adequate cardiac output, without notable congestive phenomena.

Artificially induced myxedema has been advocated as therapy for cardiac patients who have obstinate congestive failure or severe angina pectoris on the theoretic ground that the heart's work will be lessened because of the reduced metabolic rate of the body. But since, with myxedema, cardiac output may be reduced out of proportion to the drop in oxygen consumption, therapeutic hypothyroidism may have deleterious effects on the heart, outweighing the benefit of reduced metabolism.

Benign Bundle-Branch Block

JEHANGIR P. VAZIFDAR, M.D., AND SAMUEL A. LEVINE, M.D.

PERSONS in excellent health sometimes have bundle-branch block, possibly as a harmless aftermath of a long past infection.

The outlook is particularly good if only the right side is involved. Occasionally, even a patient with coronary disease and right or left block may live comfortably with little restriction of activity for ten to twenty-five years.

Benign bundle-branch block may be discovered accidentally in electrocardiograms during a routine check-up or insurance examination. Too often, the policy is denied and advice suitable for grave heart disease is given.

Among 452 cases of bundle-branch block, Jehangir P. Vazifdar, M.D., and Samuel A. Levine, M.D., of Peter Bent Brigham Hospital and Harvard University, Boston, observed 31 with no other trace of heart disease; 21 were males and 10 females. Ages were 8 to 71 years.

The right heart was affected in 27 instances and the left in 4. Those having a benign defect remained well throughout observation for five to twenty-nine years.

Benign bundle branch block. Arch. Int. Med. 89:568-574, 1952.

Time and coordinated studies are essential to ascertain the therapeutic role of isonicotinic acid hydrazide.

Status of Isonicotinic Acid Hydrazide in Treatment of Tuberculosis

AMERICAN TRUDEAU SOCIETY

BENEFICIAL effects with isonicotinic acid hydrazide in treatment of tuberculosis are encouraging but basic principles of therapy for patients with the disease remain unaltered, according to the report of the Executive Committee of the American Trudeau Society.

The drug usually reduces fever, cough, and sputum volumes within three weeks in cases of far advanced pulmonary tuberculosis. Fewer bacilli are raised, and clearing of reversible pulmonary components appears roentgenologically. In a very few cases, miliary and meningeal tuberculosis have responded favorably and initial benefit has been noted in draining sinuses and fistulas and in cases of mucous membrane tuberculosis.

Indicated dosage is 3 to 5 mg. per kilogram of body weight daily in 2 or 3 divided doses, though best amounts have not yet been determined. The drug may also be given parenterally.

Constipation, difficulty in starting micturition, increased reflexes, and positional hypotension with dizziness are transient effects that disappear during continued administration. Eosinophilia, fluctuation in hemoglobin values, and occasional casts, albumin, or reducing substances in urine are also temporary changes. Eighth nerve damage, liver injury, or skin rashes have not appeared.

$C_6H_7N_3O$, isonicotinic acid hydrazide, is a synthetic, water-soluble, pale crystal related to pyrazinamide and amithiozone. The drug is well distributed in the body within an hour or so and is largely excreted in urine.

Low concentrations of isonicotinic acid hydrazide kill *Mycobacterium tuberculosis* in vitro but the drug is ineffective against many common bacteria, some protozoa, and the influenza virus in mice. In animals, the drug eliminates tuberculosis produced with virulent human strains and approximates the effectiveness of streptomycin. Observations on development of resistant strains are meager but definitely increased resistance occurred in vitro with one strain (BCG).

Information regarding many aspects of therapy is incomplete. Mechanisms of action and whether the drug is tuberculostatic or tuberculocidal in vivo is unknown. Duration of therapy, possibility of re-

Current status of isonicotinic acid hydrazide in the treatment of tuberculosis as reported by the American Trudeau Society. Westchester M. Bull. 20:13-14, 1952.

lapse or of emergence of resistant strains, and sputum conversion are additional questions.

Patients receiving the drug should be in hospitals where careful observation, recognition of toxicity, and suitable alterations in treatment are readily available. Other precautions include frequent blood counts and urinalysis, repeated neurologic studies, and tests for renal and hepatic insufficiency.

Isonicotinic acid hydrazide may become a valuable addition to the treatment of tuberculosis, though indications are not yet established that the drug will accomplish more than streptomycin and PAS. However, increasingly effective chemotherapy may facilitate desirable forms of therapy which were previously impossible.

Small Benign Gastric Ulcers

EDDY D. PALMER, M.D.

THE tendency of small gastric ulcers to perforate or hemorrhage establishes the importance of such lesions aside from the problem of differential diagnosis.

Serious complications were observed by Lt. Col. Eddy D. Palmer, M.C., U.S.A., of Georgetown University, Washington, D. C., in almost half of 100 patients who had benign gastric ulcers no more than 1 cm. in diameter but at least 0.5 cm. deep. Significant hemorrhage requiring at least 1 liter of blood within the first eight hours occurred in 30 cases and caused 1 death. Sudden hematemesis was the first indication of stomach illness for 6 of the patients. Age, race, or sex does not influence the likelihood of hemorrhage.

Perforation occurred in 12 patients, was the first sign of illness in 8, and resulted in 1 death. Other complications were pyloric obstruction and penetration into the liver. Bleeding and perforation are less common when lesions are in the posterior wall.

Most gastric ulcers are antral, usually lying along the lesser curvature. Greater curvature ulcers are uncommon. Achlorhydria does not indicate malignancy of a gastric ulcer since 10 of the group had no free acid after histamine and twelve-hour nocturnal drainage. Even multiple benign gastric ulcers occur with less than ordinary amounts of free acid.

Benign greater curvature ulcers account for 3 to 5% of all gastric ulcers found post mortem; increasing numbers of such ulcers are being reported. The dictum, therefore, that gastric ulcers of the greater curvature are cancerous may be misleading.

The clinical significance of the small benign gastric ulcer, with a note on benign ulcer of the greater curvature and in the absence of free hydrochloric acid. Am. J. M. Sc. 223:386-391, 1952.

To relieve pain of coronary artery disease, especially in recalcitrant cases, TEAC has definite value.

TEAC and Coronary Disease

IRVING HIRSHLEIFER, M.D., GEORGE SCHWARTZ, M.D., HOWARD J. FUERST, M.D., AND ARTHUR FANKHAUSER, M.D.
Kings County Hospital, Brooklyn

RELIEF of chest pain, decreased dependence on nitroglycerin, and increased work capacity may be obtained for patients with coronary artery disease by the intramuscular injection of tetraethylammonium chloride.

The intramuscular route is recommended by Irving Hirshleifer, M.D., George Schwartz, M.D., Howard J. Fuerst, M.D., and Arthur Fankhauser, M.D., because the effects last approximately 8 times longer than after intravenous injection. Also, more time is permitted for use of the antagonist, Neostigmine, in case of precipitous fall in blood pressure.

The initial dosage of TEAC, 300 to 500 mg., is given daily for three days. Thereafter dosage is determined on the basis of [1] relief of symptoms, [2] extent of blood pressure fall, and [3] untoward side effects. The dosage is increased and the interval lengthened until a maintenance dose is found that affords the greatest relief at the longest intervals with the fewest side effects.

In all cases tolerance to the drug with reference to fall in blood pressure steadily increases, so that eventually the desired effect is obtained with only a slight blood pressure change. In most cases the maintenance dose is between 200 and 900 mg. weekly. A few patients need semiweekly injections.

Greatest blood pressure drop is observed between five and fifteen minutes after injection. Blood pressure may fall sharply if the patient stands up too soon after receiving the drug. Therefore, all patients should be kept in a recumbent or sitting position for half an hour after injection.

TEAC was given to 23 patients with coronary artery disease. Electrocardiographic improvement demonstrated by RST segment changes was observed for 5 of the 23. The others experienced great relief of pain and increased work capacity.

In 9 cases, improvement has been maintained for two to six months after discontinuance of TEAC. The other 14 patients still require the drug to remain free of pain and are given semiweekly, weekly, or biweekly injections of 300 to 1,000 mg.

TEAC also controlled pain in 5 cases of acute myocardial infarction.

Tetraethylammonium chloride in the treatment of coronary artery disease. New York State J. Med. 52:575-579, 1952.

Treatment for subarachnoid bleeding may follow one of three courses depending on the individual case.

Subarachnoid Hemorrhage and Aneurysm

ANATOLE DEKABAN, M.D., AND DONALD MC EACHERN, M.D.
McGill University and Montreal Neurological Institute, Montreal

SYMPTOMS that suggest acute meningitis or sunstroke may be the result of subarachnoid hemorrhage.

Blood in the subarachnoid space not only raises intracranial pressure but acts as an irritant, causing general systemic and local meningeal reactions. In most cases delirium or coma develops.

In many, however, the mind is perfectly clear, and the major symptoms are headache, malaise, and fever. Unless lumbar puncture is done, bleeding is unrecognized.

An investigation by Anatole Dekaban, M.D., and the late Donald McEachern, M.D., of the relation between nontraumatic superficial bleeding, intracerebral hemorrhage, and aneurysm in 143 cases observed in ten years, showed that subarachnoid hemorrhage occurs chiefly in the younger patients, is frequently due to ruptured congenital aneurysm, and is nonfatal in the majority of cases. Most patients with spontaneous subarachnoid hemorrhage recover without surgical treatment.

Primary hemorrhage within brain tissue more often results from generalized cerebrovascular disease, is more frequent among the older patients, and the outlook is less hopeful. Treatment is conservative as a general rule. If, however, the patient's general condition deteriorates, with high intracranial pressure and blood in cerebrospinal fluid, surgery may be necessary. Needle aspiration may be done through a burr hole, and occasionally craniotomy is required.

Although subarachnoid hemorrhage is often due to a ruptured aneurysm, occasionally an abnormal arteriovenous communication may be responsible and frequently the cause is unknown.

Nuchal rigidity, vomiting, and photophobia occur almost without exception. Convulsive seizures may appear at or soon after onset. Temperature and blood pressure usually are initially high, drop in two or three days, rise on the third or fourth, and remain elevated for a week.

The pulse falls with rise in blood pressure. Cerebrospinal fluid pressure is generally above 200 mm. of water, and fluid may contain 5,000 to 100,000 red blood cells per cubic millimeter. Recurrent elevation of temperature without infection indicates aseptic meningitis from repeated bleeding.

Cellular infiltration of the me-

Subarachnoid hemorrhage, intracerebral hemorrhage, and intracranial aneurysms. Arch. Neurol. & Psychiat. 67:641-649, 1952.

ninges and phagocytosis continue for about eight days and are followed by irregular fibrosis. Patchy distribution may explain the rarity of hydrocephalus in survivors.

Treatment is by 1 of 3 plans:

1] Strict bed rest is enforced for at least six weeks. High intracranial pressure is reduced to half the initial level by lumbar puncture, and craniotomy is done only in emergencies.

Since bleeding may result from blood dyscrasia, a complete hemogram is obtained. Medication should include rutin, vitamin K, and ascorbic acid.

2] In a progressive conservative plan, arteriography is done as soon as possible. Both sides are examined unless localizing signs develop. If aneurysm is found, internal and common carotid arteries are ligated at once, and in some instances the aneurysm is tied off after six to eight weeks.

3] The radical method consists of arteriography and immediate intracranial clipping or removal of the aneurysm.

In choice of treatment, several factors must be considered. Aneurysms may be bilateral or multiple, some cannot be visualized, and the rupture is seldom demonstrated by leakage of Thorotrast.

Verification of Pseudosyphilitic Reactions

HUGO HECHT, M.D.

THE diagnosis of syphilis should never be based on a single blood test, even a strongly positive one.

The one finding which proves beyond doubt that syphilis exists is the spirochete—and more than one in a smear. In addition to a positive serum reaction, at least two symptoms of syphilis must be present to make the diagnosis incontestable.

No less than two serologic methods should be used, one being a complement-fixation test, and the other a flocculation reaction, states Hugo Hecht, M.D., of Mount Sinai Hospital, Cleveland. The cardiolipin-lecithin mixture should be used as antigens in both. Repeated tests help make the decision in questionable cases.

When serum from a patient without knowledge of syphilis gives a strong positive reaction with both the syphilis and verification antigens, the patient may: [1] have syphilis and another nonsyphilitic condition reacting with the verification antigen, [2] have a disease, such as malaria or yaws, which gives a positive reaction with both antigens, or [3] belong to one of the rare families whose members have an unknown factor in the blood that causes a strongly positive syphilis reaction.

Verification test for pseudosyphilitic reactions. Ohio State M. J. 48:213-218, 1952.

Good management of the burned patient requires attention to his general physiologic needs.

Early Therapy of Severe Burns

EVERETT IDRIS EVANS, M.D.
Medical College of Virginia, Richmond

NO ideal method exists for the management of all severe burns, since many factors govern the choice of treatment.

PROGNOSIS

Age, extent of the burn, respiratory involvement, and general physical condition influence recovery. Deaths from minor burns are more frequent among elderly patients because of preexistent cardiovascular renal disease, generalized arteriosclerosis, and malnutrition, observes Everett Idris Evans, M.D. With proper treatment, infants stand burn injury quite well.

The body's need for fluid and electrolytes is increased in a linear fashion with the extent of the burn. Any respiratory burn increases the possibility of pulmonary edema and makes the prognosis grave.

ADMISSION THERAPY

On admission, the extent of burn should be charted, and initial and hourly urine samples examined. Bloody urine at onset indicates a deep, extensive burn.

Shock is likely with a burn covering 20% of the body area if no immediate treatment has been given. Extreme thirst, coolness of the extremities, rapid pulse, and apprehension are typical of the condition. Shock must be treated before burn wound therapy is begun.

For extensive burns, or for a hemoglobin above 19 gm., whole blood or colloid solution is given, and enough saline or similar solutions to secure and maintain a urine output of 50 to 60 cc. per hour.

No more than 4,000 cc. of saline should be given during the first twenty-four hours, and only half this amount during the second twenty-four hours. If three or four hours have elapsed since the burn, and shock is moderately severe, the complete twenty-four-hour amount of colloid and salt is sometimes given during the next six to twelve hours. The second day's requirements may then be started in the final hours of the first day, but rarely is more than the forty-eight-hour allotment needed.

After forty-eight hours, fluids and food are usually taken well enough by mouth. Any potassium and sodium deficiencies can then be treated orally. Forced feeding should not be employed. To avoid the pseudodiabetic state resulting from excessive carbohydrate, no more than 3,000 calories per day is given.

The early management of the severely burned patient. Surg., Gynec. & Obst. 94:273-282, 1952.

Distention of the gastrointestinal tract is relieved by the insertion of a gastric suction tube or a rectal tube and the use of prostigmine.

Penicillin and antitetanus therapy is begun on admission. Sensitivity tests on cultures from the burn may indicate other necessary antibiotics.

During shock therapy, the burn wound is covered with a sterile sheet or towels and all attendants are gloved and masked. After shock is controlled, the burn is gently washed with soap and water or other detergent. The wound may then be treated with either occlusive dressing or left exposed. Pain and infection are about the same with either method when properly used.

PRESSURE DRESSINGS

Occlusive pressure dressing consists of sterile strips of fine mesh gauze impregnated with petrolatum and covered with an occlusive dressing of dry sterile gauze, followed by mechanics' waste and elastic bandages.

Excellent results may be obtained with a dry occlusive dressing, whose inner surface is dry fine mesh gauze, covered with a 1-in. layer of absorbent cotton and then many layers of absorbent cellulose. The outer layers of the cellulose are chemically treated to be repellent and cause even absorption of the exudate. The outermost layer is water-repellent cotton fabric, but allows water vapor to escape to the exterior. The dressing rarely sticks to the wound.

Burned parts are more easily immobilized to reduce lymphatic drainage, and separation of deep burn slough is more rapid with the closed method than with exposure treatment. Encircling burns of the trunk or limbs are kept drier, but the dressings become sodden with exudate if the petrolatum impregnation is too heavy.

EXPOSURE THERAPY

Exposure treatment allows the burn wound to be open to the air, with the patient on sterile or clean sheets. Protection from drafts is necessary, but no heat cradle is used. Success depends on early drying of the burn wound.

Infection of deep, full-thickness burns is less obvious with the exposure method, though all deep full-thickness burns eventually become infected and remain so until the slough is removed and the area is grafted. Since immobilization is difficult, results of exposure therapy are poor with hand burns. The method appears to be more useful for burns of the face and perineum.

Extreme hyperpyrexia in extensive burns is easily treated with cooling measures, but a relatively high humidity and a low environmental temperature may limit the successful use of the exposure method.

Severe invasive infection involving muscle must be treated with radical debridement and excision of necrotic tissue.

Rarely, the expected stress response to burn injury does not occur, and cortisone, adrenal cortical extract, or compound F therapy may be indicated.

Manometric and radiologic studies during biliary surgery will detect conditions favoring recurrence.

Operative Examination of the Biliary Tract

P. MALLET-GUY, M.D.
Lyons, France

HYPERPRESSURE tests followed by cholangiography at the time of surgery give valuable aid in the diagnosis of diverse pathologic changes and functional disturbances of the biliary tree, which are factors in postoperative recurrences.

Cholangiograms, without a fluoroscopic examination, are often difficult to interpret correctly. P. Mallet-Guy, M.D., uses a manometric recording of pressures in the biliary tract, ascribing to the curves the equivalent of fluoroscopic visualization.

General anesthesia, with nitrous oxide-ether-oxygen, does not disturb the functional status of the biliary tract if induction is without premedication, complementary medication, and curare.

In an ordinary cholecystectomy for gallstones, without common duct symptoms, the pancreas and common duct are first carefully explored. Half the circumference of the cystic duct is then cut just beyond the point at which the last stone has been located. This is ordinarily done 4 or 5 mm. in front of the common duct. A bent cannula is then inserted into the common duct, and a hyperpressure test is made by injecting isotonic and isothermic saline solution.

Cylinder tracings showing a higher level than the usual 8 to 14 cm. of water indicate an unrecognized obstruction, such as a small stone, a relative compression of the common duct by chronic pancreatitis, or a fibrous narrowing of the sphincter of Oddi. Subnormal levels suggest the existence of hypotonia of the sphincter.

The technic of manometric recording causes no reaction of the biliary ducts, even when done after repeated hyperpressure tests.

The manometric test is followed by cholangiography, including 2 or 3 roentgenograms, taken at three-minute intervals, after injection of 10 cc. of iodized oil. Manometric readings and cholangiography are independent and do not have the same possibilities of error. If a discrepancy appears, the disturbing factor can be traced.

During reoperation after cholecystectomy, the stump of the cystic duct is identified, and the cannula introduced into the common duct.

If choledocholithiasis is suspect-

Value of peroperative manometric and roentgenographic examination in the diagnosis of pathologic changes and functional disturbances of the biliary tract. Surg., Gynec. & Obst. 94:385-393, 1952.

ed, the diagnostic tests are done only after the duct is opened, the stones removed, and the common duct freed. In this manner, any residual obstruction can be determined, and a decision can be made as to whether external drainage, primary suture of the common duct, or choledochoduodenostomy is required. When the duct has been opened for instrumental exploration, the wall of the duct must be sutured around a temporary tube at the end of surgery. A Pessar cannula or Kehr's drain may be employed.

Manometry and roentgenography of the biliary ducts are performed through a puncture of the gallbladder, when a cholecystectomy does not seem justified. This procedure will show if the common duct is occluded by a malignant tumor of the head of the pancreas or the ampulla of Vater. The gallbladder can then be used for the anastomosis or, if necessary, the hepatic duct. Tumors of the hepatic ducts or hepatitis, causing jaundice unexplained by surgical exploration, can be detected by means of the tests.

When a syndrome of static gallbladder is recognized, the physiologic pathology of such a condition is quickly analyzed by manometric and cholangiographic examinations.

In hypotonia of the biliary ducts, pressure in the gallbladder is lower than the usual level of 18 cm. of water; in disease of the cystic duct, the level is much higher.

Idiopathic disease of the sphincter of Oddi is recognized by cholangiography, as puncture of the gallbladder does not often give definite manometric information. After the injection of lipiodol, dilatation and stasis of the common duct and a terminal stricture will be observed.

¶ PREVENTION OF THROMBOSIS with small risk of bleeding may be achieved by any one of 3 anticlotting drugs containing coumarin. Effects with dicumarol, ethyl biscoumacetate (Tromexan), and 4-hydroxycoumarin anticoagulant No. 63 in 250 cases are summarized by Nelson W. Barker, M.D., Hugh H. Hanson, M.D., and Frank D. Mann, M.D., of the Mayo Clinic, Rochester, Minn. The 3 drugs seem equally useful. Tromexan is started with 1,500 mg. the first day and 600 to 900 mg. on the second day; anticoagulant No. 63 is initiated with 100 to 150 mg. the first day and 25 to 50 mg. on the second; dicumarol is begun with 300 and followed by 100 mg. on the second day. Thereafter, the guide to dose and frequency of administration is the initial and subsequent response of the prothrombin time. Tromexan acts and subsides more rapidly but fluctuates more widely than dicumarol. Anticoagulant No. 63 varies less during the course and persists longer when dosage is discontinued.

J. A. M. A. 148:274-277, 1952.

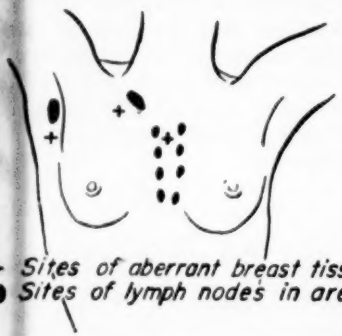
Intermittently painful axillary or sternal tumor during menstruation suggests misplaced breast tissue.

Aberrant Breast Tissue

JOSEPH M. ROBERTS, M.D.
University of Oregon, Portland

MAMMARY tissue congenitally misplaced without nipple or areola to aid identification can easily be mistaken for some of the other more commonly found circumscribed growths.

Such aberrant breast tissue usually appears in the axillary, subclavicular, or sternal regions, but



may develop in other locations. The mass is best seen when the patient is seated or standing with both breasts exposed and arms abducted (see illustration).

Most often the swelling appears simultaneously with the development of the normal breast, at pregnancy, or in the menopause. Swelling of the tumor during the premenstrual and menstrual periods will result in pain and tenderness. The pain is alleviated following the menses.

Such an anomaly is believed to result from failure in the extinction process of the embryonic milk lines, two parallel rows of epithelium appearing on the ventral surface of the embryo from the axilla to the pubis.

The tumor must be surrounded by fat or indurated tissue distinctly away from the normal breast to be classed as aberrant. Aberrant breast tissue occurs equally in both sexes.

The high incidence of fibroadenomas and carcinomas in aberrant breast tissue is probably related to the irritation resulting from the stagnation of secretion and cellular debris. Because of the immediate nearness of regional lymph nodes and the tendency to metastasize early, carcinomas in congenitally misplaced breast tissue have a poor prognosis.

Joseph M. Roberts, M.D., believes that the susceptibility of this tissue to benign and malignant tumor formation and the cyclic swelling and pain are ample indications for surgical excision. If the tissue is conspicuously located, excision may be performed for esthetic and psychologic reasons as well.

Recognition and treatment of aberrant breast tissue. West. J. Surg. 60:175-179, 1952.

Conservative regime is preferred for most patients with arterial occlusion but, for some, operation is indicated.

Surgical Therapy for Arterial Occlusion

JERE W. LORD, JR., M.D.
New York University, New York City

WHETHER operation should be used in treating arterial occlusion, acute or chronic, depends not only on the pathogenesis of the arterial block but also on the setting in which the episode occurs.

Jere W. Lord, Jr., M.D., advises careful appraisal before deciding on therapy and describes a successful operative procedure for occlusion of the subclavian or axillary artery.

The four major causes of *acute arterial occlusion* are embolic, thrombotic, traumatic, and spasmodic.

Operative procedure is indicated when *embolic occlusion* of an artery originates in the left auricular appendage of a patient with mitral stenosis and chronic auricular fibrillation. Ideally, an embolectomy should be performed for patients under 50 if seen within ten hours of onset, if the obstructed vessel is the aorta or the iliac or femoral artery, and if the patient's general condition is good. In such cases, a left auricular appendectomy and commissurotomy should be performed later to eradicate the source of the embolus, usually the left auricular appendage.

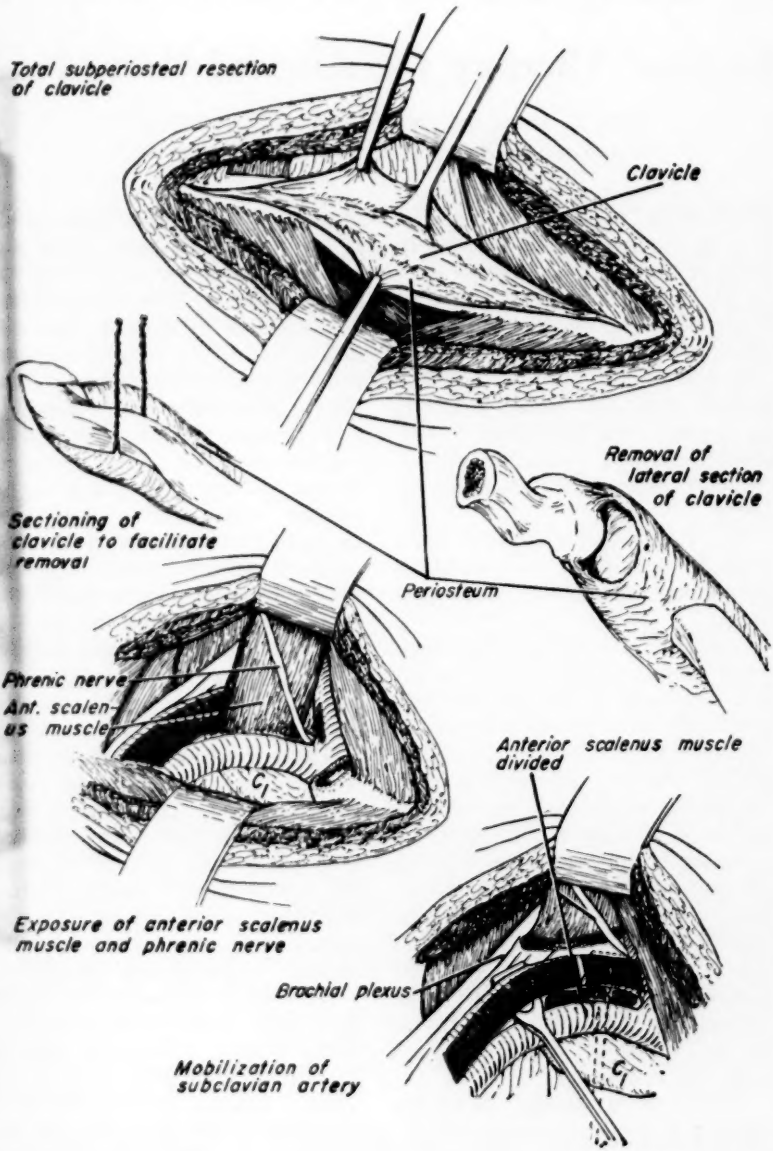
Embolectomy should not be employed [1] for patients with emboli in the upper extremity, because gangrene rarely results, or in the lower extremity from the popliteal artery down, because of operative difficulties, [2] for elderly patients, since the associated arteriosclerosis often predisposes to thrombosis and permits greater tolerance of sudden occlusion of the main artery, [3] when so much time has elapsed that early irreversible changes have appeared in the foot or local changes from adherence of the embolus to the vessel wall may lead to thrombosis after arteriotomy from endothelial damage, and [4] when the patient's general condition makes surgery too great a risk.

The second important cause of acute arterial occlusion, the *thrombotic episode* occurring suddenly in an individual with advanced arteriosclerosis, is best managed by nonoperative therapy. Thrombectomies with regional heparinization are not successful often enough to justify the hazard.

Traumatic occlusion of an artery may result from a bullet or knife wound, a fracture with laceration of the vessel, or a surgical error. Arterial repair should be

The surgical therapy of acute and chronic arterial occlusion. Bull. New York Acad. Med. 28:259-274, 1952.

Occlusion Due to Shoulder Girdle Syndrome



done within two to twelve hours by direct suture or an autogenous vein graft or homologous arterial graft. Arteries ligated during an aseptic operative procedure, such as hernioplasty, or during a high saphenous ligation may be reconstructed twelve to twenty-four hours after closure of the wound.

The *spasmodic type* of acute arterial occlusion occurs most frequently in massive venous thrombosis of the lower extremity and is handled best by Veal's method of vigorous passive and active exercise of the leg with elevation as soon as possible. When spasmodic occlusion appears after a fracture or dislocation of a joint near the artery, a paravertebral or stellate ganglion procaine block and anticoagulants usually abolish the arterial spasm.

Surgical therapy in *chronic arterial occlusion* should be limited to carefully selected cases, usually after a thorough trial with nonoperative measures. Sympathectomy may be effective, but only when vasomotor tone is demonstrable by preliminary tests. Sympathectomy should not be used when the solē lesion is intermittent claudication.

In most cases of chronic arterial occlusion, a nonoperative regime is preferable.

Patients with temporary or permanent occlusion of the subclavian or axillary artery from one or more of the shoulder girdle syndromes may be effectively treated by surgery.

The technic consists in total subperiosteal resection of the clavicle followed by removal of the periosteum, division of the scalenus anticus muscle, and mobilization of the subclavian artery (see illustration).

The procedure has been used with good results for 8 patients with a combination of two or more of the following syndromes: hyperabduction, scalenus anticus, and costoclavicular, with or without a cervical rib. The 8 patients had 12 involved upper extremities.

In those patients who did not have thromboses, the radial pulse is strong in all positions of the arms; in those who had thromboses, radial pulsation, although weaker, has returned in each extremity. In each case, numbness, tingling, fatigue, and pain have cleared.

¶ SEXUAL PRECOCITY may result from interstitial cell tumor of the testis. Muscular development of infant Hercules type and excessive androgen excretion are observed, as with adrenal cortical tumor or hyperplasia. The ninth case on record, a 2-year-old boy, was encountered by G. H. Newns, M.D., of the Hospital for Sick Children, London. The growth was excised, ketosteroid excretion fell to normal, the penis shrank, and pubic hair disappeared, but deep voice and large muscles persisted. The child was expected to grow up to sexual age but probably will be of short stature.
Brit. J. Surg. 39:379-381, 1952.

Watchfulness and supportive and rehabilitative measures are basic in treatment for poliomyelitis.

Symposium on Poliomyelitis

JOSEPH J. MUENSTER, M.D.
St. Louis University, St. Louis

SEDGWICK MEAD, M.D., BETTYE MC DONALD CALDWELL, PH.D., AND DON L. THURSTON, M.D.
Washington University, St. Louis

FREDERIC J. KOTTKE, M.D.
University of Minnesota, Minneapolis

THOMAS GUCKER III, M.D.
Georgia Warm Springs Foundation, Warm Springs

FOR those who are especially concerned with the treatment of the poliomyelitis patient—the general practitioner, pediatrician, internist, physical therapist, and orthopedic surgeon—the following symposium has been assembled. The design of this presentation is to make available essential basic and practical data on the disease.

The Acute Stage

JOSEPH J. MUENSTER, M.D.

THE principles of management of the acute stage of poliomyelitis fall into two categories: [1] careful and constant observation and [2] wise supportive and symptomatic treatment.

If the patient does not have respiratory difficulty or cranial nerve involvement, the acute or critical phase of poliomyelitis may be said to end when the fever disappears. At this time progression of the infection and of the clinical manifestations ordinarily ceases, states Joseph J. Muenster, M.D.

Staff duties—Poliomyelitis requires individual consideration in each case. However, some routine policy is necessary for management of large numbers of patients.

The responsibility for decisions and for outlining the patients' care should rest with the director of the poliomyelitis ward. The director and staff of the ward should not be wholly independent, but should utilize consultant services of the rest of the hospital staff.

A nurse should be in constant attendance in a room with 6 to 8 patients in the acute phase of the disease. Particularly to be watched for are changes in color, the onset or progression of irritability, restlessness, euphoria, or mental depression—all subtle signs of early hypoxia.

A resident staff member should carefully inspect hourly for the onset or progression of paralysis, difficulty in swallowing, pooling of

Symposium on poliomyelitis. J. Missouri M. A. 49:209-232, 1952.

secretions in the pharynx, and weakness of voice, and should test diaphragmatic excursion and intercostal muscle function.

Isolation—Since the epidemiology and transmission of poliomyelitis are obscure, isolation is considered essential. Patients who unquestionably have poliomyelitis are placed in one ward so that physicians and nurses need not change gowns or sterilize hands in going from patient to patient. The period of isolation should last at least ten to fourteen days.

Paralysis—Testing of individual muscle groups is unnecessary and may even cause additional damage during the acute stage. Activity is harmful at this time, hence bed rest is rigidly enforced, even in preparalytic and abortive cases. Gross deformities and paralyzed extremities are supported by foot boards, sandbags, and plaster casts.

Urinary retention—Catheterization is used only as a last resort in cases of urinary retention, commonly seen with patients of any age who have poliomyelitis. Parasympathomimetic drugs, such as Furmethide or Doryl, should be tried first. The symptom rarely lasts beyond four days.

Pain and spasm—Two of the most disturbing aspects of the acute phase are pain and spasm. No actual spasm of skeletal muscle occurs.

The pain, hyperesthesia, and pseudo muscle spasm are probably the result of involvement of the ganglia of the sympathetic trunk causing sympathetic imbalance and consequent vasospasm. Considerable relief often is obtained by Priscoline alone or with procaine.

The initial dose of Priscoline, 15 to 25 mg. intramuscularly, is raised by 5 mg. with each four-hour injection until a therapeutic effect is observed. This is usually reached at about 50 mg. every four hours for adults, and 25 to 35 mg. for children. The dose is reduced by 5 mg. if pronounced flush or nausea appears. The oral preparation is used after the effective dosage is determined.

Dosage of intravenous procaine is based on the procaine unit—4 mg. per kilogram of body weight as a 0.1% solution in normal saline, delivered intravenously in a period of twenty minutes. After the initial infusion of 1 unit, with careful supervision for reactions, the usual dosage is a 2- or 3-unit infusion three times a day.

Hot, moist applications and drugs such as curare and Prostigmine are also used to relieve pain and spasm, but may not be needed if the sympatholytic drugs are used.

Other therapy—Penicillin and other antibiotics are given to patients with respiratory embarrassment or cranial nerve signs, when bacterial infection is a possibility, or if fever, leukocytosis, or spinal fluid cell count is not that usually found with poliomyelitis.

Physical Therapy

SEDGWICK MEAD, M.D.

THE three main requirements for physical treatment of poliomyelitis patients, explains Sedgwick Mead,

M.D., are [1] an understanding of the pathologic process and physiologic effects of physical agents, [2] competent technical personnel, and [3] adequate equipment, which may be simple and frequently can be improvised.

Acute stage—As long as the patient has fever or increasing weakness, almost complete bed rest must be enforced. During this period, the therapist gives passive exercise to the patient's trunk and extremities through a complete range of motion.

Each movement is done ten times and repeated twice daily. The most important motions are trunk, knee, and dorsiflexion, hip flexion with extended knee, hip internal rotation, and shoulder abduction and rotation.

Some deformities result from neglect but other types cannot be prevented even by faithful treatment.

Intermediate stage—The objectives during the intermediate period are to get rid of residual muscle shortening and discomfort, start muscle reeducation, and begin resistance exercises to restore strength.

Walking is allowed if body strength permits and deforming stresses can be avoided. Residual muscle tightening is treated by whirlpool baths or tank treatment, followed by fractional stretching. Incoordination or substitution is vigorously combated.

Treatment can be administered successfully in a small hospital by the general practitioner, internist, or pediatrician.

An interrupted schedule is often used in the intermediate stage, since the gradient of improvement with progressive resistance exercise is no faster when given continuously than when used in divided periods. Bad psychologic effects and lack of cooperation may appear if uninterrupted therapy is attempted.

Late phase—Progressive resistance exercises are given in the late stage of poliomyelitis from four to six times weekly until no further gains are noted. Home therapy is advisable with weekly checks of achievement. At the end of such a regimen, the patient is given a three- to four-month vacation although observation of scoliosis, foot mechanics, and braces is necessary.

When two or three such periods of exercise fail to bridge the functional level of a muscle, the patient can usually be convinced that the disability is permanent.

Postconvalescent phase—Intensive physical therapy is rarely needed after one year unless early treatment has been utterly neglected. The postconvalescent stage is the period of orthopedic corrections.

Intensive treatment is sometimes given for brief periods for reeducation of tendon transplants or final instruction in crutch gaits, wheelchair transfers or other self-care activities. Substitute motions, sternly combated in early stages of the disease, may now be allowed when useful.

Prognosis—The use of physical therapy is often abused. Definite goals and precise prescribing should be done so that useless treatment, overtreatment, and false hopes are avoided. Overhospitalization, with

separation from the family, causes irreparable damage to small children.

Muscles showing a decidedly favorable tendency to recover function are those innervated by the cranial nerves, the neck muscles and trapezius, elbow flexors, intercostals, knee extensors, and plantar flexors.

However, particular difficulty is usually encountered with the opponens pollicis and other small muscles of the hands and feet, the abdominals, especially the transversalis, the abductors and external rotators of the shoulders, and the serratus anterior.

Psychologic Reactions

BETTYE MC DONALD CALDWELL, PH.D.

GENERALIZATIONS cannot be made concerning the psychologic effects of crippling from poliomyelitis. To obtain the best personality development for each handicapped child, guidance efforts must be considered individually.

A wide variety of behavior patterns are seen in children after poliomyelitis, states Bettye McDonald Caldwell, Ph.D., among the most commonly reported being regressive behavior and reversion to an earlier level of development.

Temper tantrums, emotional lability, and incontinence are not infrequent. Poliomyelitis patients are often egocentric and demanding. Sometimes persistent dependency, hypochondriasis, and feelings of inadequacy and hopelessness emerge, or rebellion and blame of others for the incapacitation.

The response of a particular individual to physical handicap, therefore, may run the gamut from extremely maladjustive to completely constructive.

The following factors influence this reaction:

Age—The values held by the patient at the time the handicap is acquired are important in determining the attitude toward the disability. Loss of motor activity is of utmost importance to a child of 4, an adolescent patient may mind the disfigurement of a crippling paralysis more than the physical aspects, and a vocational limitation is usually the most serious trauma for an adult.

Fantasies at the time of illness—Quite young children regard parents as omnipotent and thus are likely to consider the parents to blame for a crippling handicap and have strong feelings of hostility. Children may consider loss or deformity of a limb as punishment for some unacceptable act.

Neurologic involvement—Many children with poliomyelitis have cerebral involvement. Difficulties in learning, inability to sustain effort, short attention spans, and irritability are frequent. Some of the maladjustive behavior may result from an organic deficit rather than psychic trauma.

Attitudes of the parents—A child usually tolerates a disfiguring anomaly to the extent that the mother is able to accept the deformity. Parental rejection, sometimes disguised as overprotection, is a frequent

cause of unfavorable attitude in the crippled child.

Gratifications in physical disorders—Narcissistic satisfactions are experienced by disabled persons. Defect and suffering give the handicapped a claim to approval, attention, or even admiration. Animosity and jealousy from other family members may sometimes lead to ostracism and ridicule which, in turn, further affect the personality of the crippled child.

Severity of disability—Adjustment is frequently more difficult if the handicap is not sufficient to prevent the patient from many ordinary activities. In such cases, the crippled child competes with healthy children and is constantly aware of being inadequate. In more extreme cases of deformity, competition and comparisons are not a great factor.

Bulbar Poliomyelitis

FREDERIC J. KOTTKE, M.D.

IMPAIRMENT of centers which automatically control circulation and respiration complicate the therapy of patients with bulbar poliomyelitis. Special problems of [1] respiration, [2] circulation, [3] nutrition, and [4] deterioration of the body from immobilization are involved, states Frederic J. Kottke, M.D.

Respiration—Measures necessary to achieve respiration are maintenance of a free airway, ventilation, oxygenation, and prevention of pulmonary congestion, edema, and pneumonia.

The pharynx and larynx may be obstructed from a number of causes, accumulation of saliva in the lower pharynx from a paresis of the pharyngeal musculature being the commonest. Until the patient can swallow saliva, feeding by mouth should not be attempted because of possible aspiration and choking.

With involvement of the ninth, tenth, and twelfth cranial nerve nuclei, the upper airway may collapse. The tongue may fall back into the pharynx decreasing the airway. Paralysis of the vocal cords may cause complete mechanical obstruction.

Patients with any evidence of bulbar involvement should be placed in the prone Trendelenburg position to allow postural drainage of saliva and mucus from the mouth. Many patients require mechanical suctioning of accumulated fluid.

The prone Trendelenburg position is impossible for the patient with bulbar-respiratory poliomyelitis who does not have sufficient respiratory muscles for adequate ventilation. Therefore, gravity cannot be depended upon to drain saliva from the mouth of patients in mechanical respirators.

These patients require tracheotomy if the airway cannot be kept open. Tracheotomy should be done when maintenance of an adequate airway seems unlikely, and before hypoxia has occurred.

If the muscles of respiration lack sufficient strength, a respirator is necessary to maintain ventilation. Obstruction to the airway must always be relieved before the patient is placed in a respirator. If a tra-

cheotomy is to be done in a respirator, the respirator collar must provide enough space so that the tracheotomy tube and attachments are above the level of the collar. A funnel-shaped collar with a zipper on each side is best for this purpose.

Oxygen is a basic need for cell metabolism. The brain and spinal cord have no oxygen reservoir, therefore oxygen must be supplied continuously through adequate circulation to prevent destruction of neurons.

Supplementary oxygen can be supplied by nasal catheter, mask, tent, or through an attachment to the tracheotomy tube. Since compressed oxygen is completely dry, humidity at a temperature of 90° F. is needed to circumvent dehydration and irritation in the trachea and inspissation of the secretions in the bronchi. Catheters for suctioning tracheotomies are inserted, used for only two or three seconds, and withdrawn quickly so as not to promote hypoxia.

Circulation—In bulbar poliomyelitis, involvement of the circulatory centers of the medulla may result in the loss of circulatory control with a pronounced fall in blood pressure. The hypotension is combated vigorously by placing the patient in the Trendelenburg position and giving epinephrine. Circulatory insufficiency resulting from medullary center involvement is a serious condition with an extremely grave prognosis.

Nutrition—The patient with bulbar poliomyelitis often can take nothing by mouth. Feeding is done by intravenous solutions or better by means of high caloric diets administered slowly through a stomach tube. If the latter is given, the necessary proteins, vitamins, and fats are easily provided.

Immobilization—The patient with bulbar poliomyelitis, especially if placed in a respirator, needs particular care to prevent discomfort, contractures, decubital ulcers, and other lesions from long immobilization, such as thrombophlebitis.

Hand Rehabilitation

THOMAS GUCKER III, M.D.

PROPER use of the hands is of utmost importance for the ultimate employability and happiness of the poliomyelitis patient.

If the hand is to be a functional unit, adequate grasp and the ability to pinch are mandatory, emphasizes Thomas Gucker III, M.D. The muscles motivating the thumb, including those of the thenar eminence which participate in pinching are commonly paralyzed by poliomyelitis.

Early treatment—The ultimate use of the hand depends largely on the care given during the first few months after paralysis. Too much stress cannot be placed on the need for properly fitting splints which maintain the hand, fingers, and thumb in a position of function. These are worn at night and as much of the day as needed to prevent progressive contracture. Motion of all joints should be instituted as soon as tolerated to insure joint mobility.

Operative treatment—Atrophy of the thenar eminence indicates paralysis of the three important muscles used for successful function of the thumb. Even if the extrinsic long tendons to the thumb have normal power, the essential grasping, pinching movements are absent.

The most successful procedure to correct the disability employs the sublimis tendon from the ring

Rerouting of sublimis tendon

finger. The tendon is divided distal to the metacarpophalangeal joint, withdrawn to the lower forearm, brought around the tendon of the flexor carpi ulnaris, thence through a subcutaneous tunnel over the thenar eminence, and finally inserted through bone in the proximal phalanx of the thumb from the ulnar side (see illustration). This procedure is not difficult to perform and can be used to excellent advantage in restoring a commonly encountered disability with poliomyelitis.

Another deformity often seen is hyperflexion of the metacarpophalangeal joint of the thumb with inadequate pinch and grasp. A solution to this problem is fusion of the metacarpophalangeal joint in slight flexion. Even though complete function of the hand is not always restored, slight improvement in a few essential movements may make a world of difference to the patient.

Polioencephalomyelitis

DON L. THURSTON, M.D.

FOUR stages of variable duration are recognizable in polioencephalomyelitis.

The first stage, states Don L. Thurston, M.D., is the least characteristic. Manifestations are moderate fever, headache, and numerous nonspecific symptoms such as malaise, pharyngitis, coryza, nausea, and vomiting. When a child has these symptoms and polioencephalomyelitis is known to be in the locality, examinations should be repeated and the importance of rest stressed.

In three to five days, the central nervous system is invaded and the second stage of the disease begins. The temperature again rises. The patient has severe headache, anorexia, and irritability. The child's face is flushed. Perspiration is excessive and hyperesthesia becomes prominent.

In order to sit up the patient rolls to the side or pushes up with the arms from behind and sits in a typical manner with stiff back. Similar stiffness may be elicited in the extremities; pain is felt on attempted extension. The deep reflexes may be slightly hyperactive. Vomiting decreases unless the higher centers are affected. The child is often constipated. Two or three days

elapse before true paralysis becomes evident.

With a persistence of fever and onset of paralysis, manifestations of the third stage are noted. Paralysis is heralded by involuntary tremors, often to the point of ataxia, from vestibular involvement. The deep reflexes are now diminished or absent.

After development of paralysis, which usually reaches a height by the fifth day, fever regresses and the fourth or recovery stage begins.

The only laboratory procedure of specific significance is examination of the spinal fluid. During the early phases of the disease lumbar taps reveal little. With evidence of central nervous system involvement, slight polymorphonuclear pleocytosis is found. When weakness appears, the cell counts are from 15 to 200 per centimeter and are chiefly lymphocytes.

Other diseases are to be considered in the differential diagnosis. Lymphocytic choriomeningitis is seen among 20- to 40-year-old patients with a prodrome of grippe-like symptoms followed in twenty-four hours by clear-cut meningeal signs.

St. Louis, equine, and mumps encephalitis may be impossible to differentiate from polioencephalomyelitis in the early stages, but the preponderance of encephalitic signs in relation to the paralysis helps in the diagnosis.

Acute bacterial meningitis usually causes abrupt unrelenting headache, vomiting, nuchal rigidity, and a positive Kernig sign. The characteristic spinal fluid and lack of paralysis serve to differentiate this disease.

Rheumatic fever, with early splinting of the joints, may occasionally lead to a faulty diagnosis.

A difficult differential diagnosis is between Guillain-Barré syndrome and polioencephalomyelitis. The former usually has sudden onset of symmetric weakness in the lower extremities, with ataxia out of proportion to the weakness, and a high spinal fluid protein.

¶ REVERSED BOWEL ROTATION may partially obstruct the transverse colon and duodenum. The condition was diagnosed in a baby girl by serial gastrointestinal fluoroscopy and barium enema. Robert Orr Warthen, M.D., Isidore Lattman, M.D., and Charles Stanley White, M.D., of the Children's Hospital of Washington, D. C., on operation found a loop of redundant transverse colon bound down over the duodenum by adhesions. The proximal transverse colon was caught behind the superior mesenteric artery in the angle formed by junction of the artery with the aorta. Adhesions were divided, and the colon was freed and dropped into the pelvis. When last seen at the age of 16 months, the child was in good health. Only 27 previous cases of reversed rotation of the midgut have been reported.

Am. J. Dis. Child. 83:487-492, 1952.

Strained meat added to formula feeding of premature babies does not affect growth response.

Meat in Premature Infants' Diet

P. S. GERALD, M.D.
11th Field Hospital, New York City

M. B. ANDELMAN, M.D., A. C. RAMBAR, M.D., AND B. M. KAGAN, M.D.
Michael Reese Hospital, Chicago

ADDITION of strained meat to proprietary milk formula does not produce a greater growth response in premature infants than milk formula alone. Breast-fed premature babies grow more rapidly than those given either synthetic formula.

After discharge from the premature nursery at a weight of about 2,000 gm., infants were fed either [1] a milk formula containing 0.95 gm. of protein and 19 calories per ounce, [2] the milk formula with strained meat containing 1.7 gm. of protein and 24 calories per ounce, or [3] breast milk. All received similar vitamins, iron, and solid foods.

The special diets were maintained for approximately six months. During the second six months, all received essentially the same food. Observations were made biweekly for the first six months and at the end of the first year by M. B. Andelman, M.D., P. S. Gerald, M.D., A. C. Rambar, M.D., and B. M. Kagan, M.D.

The slope of the linear portion of the sigmoid curve of weight versus age was taken as a good index of growth, since this is unaffected by age or birth weight. Linear growth occurs between 2,500 and 4,500 gm. of body weight and is the period of most rapid gain.

An average gain of 231 gm. per week is seen in infants fed the meat-supplemented diet, while infants fed unsupplemented diets gain 250 gm. per week. Breast-fed infants grow at a rate of 300 gm. per week. Only slight differences are observed in rate of change of crown-heel length. At 12 and 20 weeks, serum protein content is highest in infants given the synthetic formula; at 20 weeks hemoglobin concentration is greatest in the meat-supplemented group.

No difference in average weight, height, serum protein, hemoglobin, or red blood cell count is found between unsupplemented and supplemented formula-fed children at 1 year of age.

Since previous studies have shown meat to be well assimilated and utilized, failure to benefit from the added calories of the meat supplement must be caused by reduction in volume of formula con-

Effects of early feeding of strained meat to prematurely born infants. Pediatrics 9:485-491, 1952.

sumption. Analysis of data in a limited weight range reveals the average volume intake to be 23 oz. for the supplemented group and 28.7 oz. for the unsupplemented. Thus, a remarkably similar caloric intake of 170 and 168 calories per kilogram for the respective diets is provided by self-limitation of intake.

Duplications of the Alimentary Tract

ROBERT E. GROSS, M.D., GEORGE W. HOLCOMB, JR., M.D., AND SIDNEY FARBER, M.D.

SPHERICAL or tubular structures with a mucosal lining, well-developed muscular layer, and often a serosa may occur anywhere along the digestive tract, causing pain, hemorrhage, or obstruction. These congenital malformations with or without symptoms should be removed promptly.

Robert E. Gross, M.D., George W. Holcomb, Jr., M.D., and Sidney Farber, M.D., list 68 examples of duplication seen at Children's Hospital, Boston, from 1928 through 1950. About 40% occur along the ileum, but others appear from tongue to rectum. Width may be 1 to 10 cm. or more and length up to 65 cm.

The principal shapes are [1] the most common, a round lesion contiguous with the bowel, [2] a tube that branches from the bowel and extends between mesenteric leaves or into the thorax, [3] a double-barreled form entering the intestinal lumen at one or both ends, and [4] rarely, a cyst lying in the peritoneal cavity, attached only by a thin mesenteric stalk.

Symptoms vary according to location and size of the duplication and type of fluid secreted. Dysphagia, cough, cardiorespiratory distress, hematemesis, colicky pain, or constipation may result. Intense inflammation, ulcer, fistula, and intussusception may develop.

When an anomaly is suspected, plain roentgen films should be made in horizontal, upright, and lateral views. A barium meal or enema is sometimes required.

Operation is done as soon as feasible.

Cystic lesions are generally removed in toto by technics depending on circumstances. Marsupialization is now considered archaic. If a thoracic duplication arising below the diaphragm has a lining of colonic type, only the chest segment is removed. If the lining is gastric in type, abdominal and thoracic portions should be resected, possibly in one procedure, with end-to-end anastomosis of the jejunum.

Duplications of the alimentary tract. Pediatrics 9:449-468, 1952.

Congenital anal malformations can usually be corrected by relatively minor perineal operative procedures.

Malformations of Anus and Rectum

HARRY E. BACON, M.D.
Temple University, Philadelphia

LLOYD F. SHERMAN, M.D.
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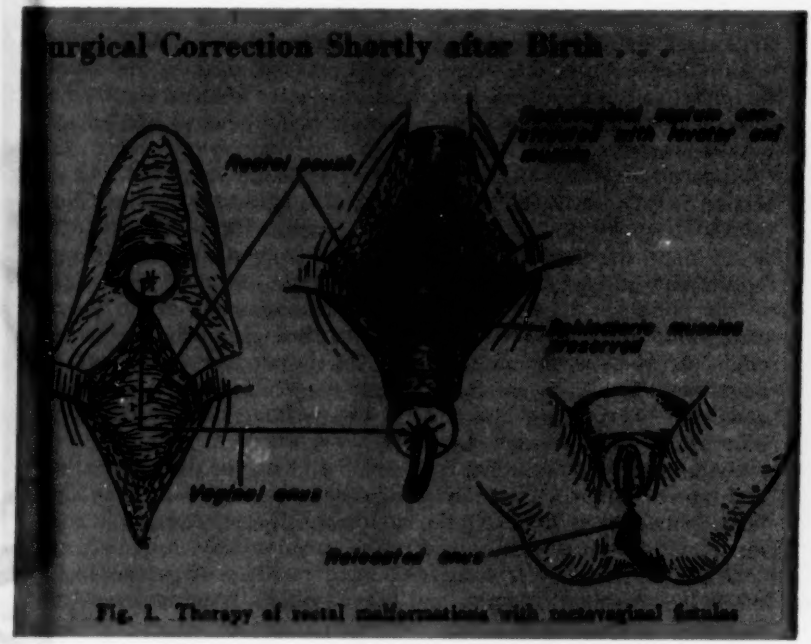


Fig. 1. Therapy of rectal malformations with rectovaginal fistulas

IMPERFECTIONS in the developmental pattern during the sixth to ninth week of fetal life are responsible for congenital malformations of the rectum and anus.

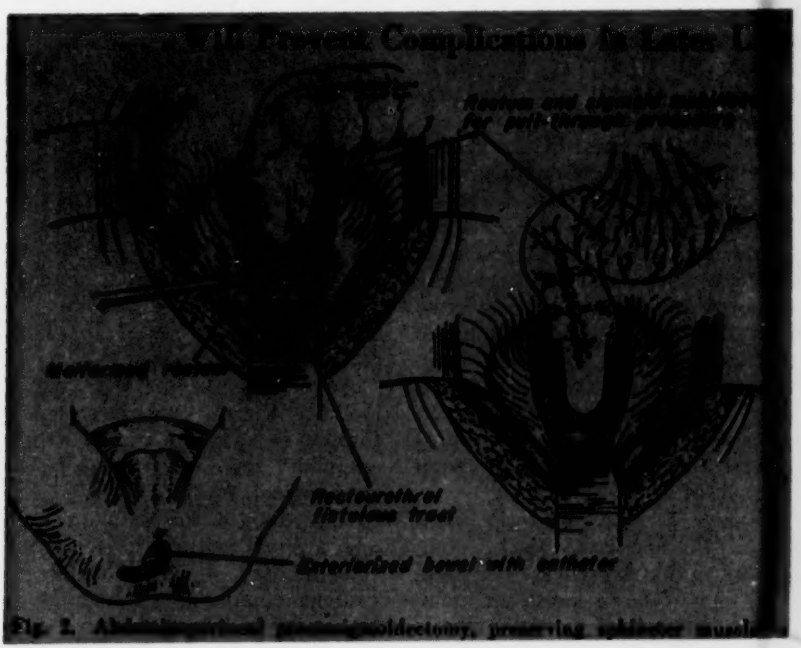
Such anomalies may require surgical intervention immediately after birth or can become a source of complications later in life. The malformations are commonly as-

Surgical management of congenital malformations of the anus and rectum. Arch. Surg. 64:331-344, 1952.

sociated with other body anomalies.

Membranous or mural stenosis of the anal canal or imperforate anus results from improper absorption of the anal plate. Under- or overdevelopment of the urorectal septum produces abnormal locations of the anus.

Nonfistulous rectal malformations appear when the solid stage tract are undoubtedly formed during the descent of the region of attachment of the müllerian ducts to the posterior wall of the urogenital sinus; the ducts assume any fistulas already existing between the rectum and the urogenital sinus. Rectoperineal fistulas are probably formed by obliteration by the anterior or ventral portion of the cloacal duct, with persistence of



of either the ampulla or the supra-ampullary segment of the rectum persists. Fistulous anomalies in the male are probably caused by primary failure of the cloacal duct to disappear.

In the female fetus, connections between the rectum and the genital the dorsal portion; dissolution of the cloacal membrane results in an external perineal opening.

Fistulous malformations and absence of the ampullary segment frequently occur together.

Most anal anomalies can readily be detected by careful inspection

of the perineum at birth or by digital and anoscopic examination. Roentgen examination may be necessary to determine the true location of the terminal bowel. Fistulas can be detected by inspection, probing, or injection of a radiopaque substance.

If the ampullary segment of the rectum is absent, determination of the level of the rectal pouch and the amount of intervening tissue is frequently difficult. To judge the amount of tissue, a radiopaque marker is placed over the anal dimple, and roentgenograms are made with the child in the inverted position. Gentle abdominal massage may be necessary to force air into the terminal bowel. Absence of the supraampullary segment is frequently not diagnosed until signs of bowel obstruction are apparent.

If the nature of the anomaly provides no vent, such as a large fistula, for the egress of flatus and feces from the intestinal tract, some type of decompression procedure becomes mandatory soon after birth.

Harry E. Bacon, M.D., and Lloyd F. Sherman, M.D., completely excise a partially persistent anal membrane or incise the membrane and suture the free margin to the sphincter ani muscle fibers. A posterior sphincterotomy is done if any residual stenosis exists.

With mural stenosis of the anal canal, the outlet is enlarged by a posterior sphincterotomy and a V of mucosa is lightly sutured to the sphincter muscle at the posterior commissure.

A completely imperforate anal plate can be incised with cruciate incisions and the skin borders trimmed, or the tip of each quadrant may be lightly sutured to the sphincter.

Abnormally located anal canals are usually misplaced anteriorly, and the anus and rectum can be transplanted to the proper site by a modified Rizzoli procedure. Construction of an adequate perineum or rectovaginal septum with levator ani muscle prevents return of the rectum to a malposition in later life.

A transverse colostomy is usually necessary immediately in the presence of a rectal malformation in a newborn, since the fistulas that frequently occur with the anomaly are often not large enough to prevent bowel obstruction. A sigmoid colostomy limits the mobility of that segment of bowel for later reconstructive surgery.

After the child is 3 years old, a modified Rizzoli procedure is performed for absence of the supraampullary segment with associated rectovaginal fistula (Fig. 1). Exteriorization of the fistulous tract and a small portion of the distal rectum over a large mushroom catheter compensates for anticipated retraction. The redundant bowel can be excised and the anal canal reconstructed as a minor operative procedure seven to eight days after the initial surgery.

Other rectal malformations are reconstructed at 3 to 5 years of age by an abdominoperineal proctosigmoidectomy with preservation of the anal sphincter muscle bundle (Fig. 2).

Transsphenoidal operation for pituitary tumor is often safer and more effective than cranial surgery.

Excision of Pituitary Tumors

OSCAR HIRSCH, M.D.
Boston City Hospital

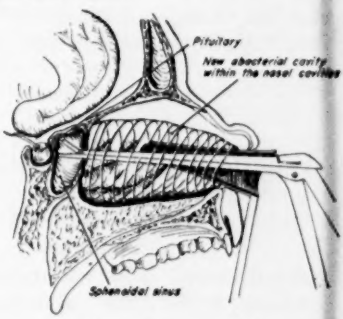
MOST hypophyseal neoplasms can be effectively treated by an endonasal-septal operation with supplemental radium application.

Medical treatment is limited to cases of progressive acromegaly with headache and paresthesia or numbness of the fingers. The response to estrogen therapy in such cases is often favorable.

Roentgen treatment is frequently preferable for acromegaly without visual disturbance and for solid tumors with progressive visual loss not yet progressed to bitemporal hemianopsia. The therapy is assumed not to involve any risk or undesired effects except epilation, but incidents of cerebral disturbances do occur.

The transfrontal operation for pituitary tumors is difficult in instances of prefixed chiasma, since access to the tumor is impeded, and often one optic nerve must be cut or a portion of the frontal lobe resected. In persons over 60 with shrunken convolutions and dura strongly adherent to the bone, the operation may result in mental disorders. Cranial operation has a mortality of about 12% with the chances of lasting improvement amounting to 49%.

Transsphenoidal operation has a mortality of 5%, with chances of lasting improvement amounting to 74%. Of 19 patients with the longest lasting results, 15 maintained improvement of vision for nineteen to thirty years, reports Oscar Hirsch, M.D.



Endonasal-septal method

The operation consists of a submucous resection of the septum, carried as far as the anterior walls of the sphenoidal sinus (see illustration). When the flaps of the septum are spread by a speculum, a new cavity results, with no communication with the nasal cavities except for the first incision. Removal of the rostrum of the sphenoid bone opens one or both sphenoidal sinuses. Both must be opened and any intersphenoidal septum removed.

Symptoms and treatment of pituitary tumors. Arch. Otolaryng. 55:268-306, 1952.

The enlarged sella is opened if no defect is already present. The bony sella is removed, exposing the periosteum. The tumor is directly behind. If aspiration reveals fluid in the tumor, a tiny incision is made to allow the fluid to escape slowly. A flap of periosteum is excised or turned in to prevent closure of the cyst, and a tube is left in the cavity for several weeks.

Soft and solid tumors are removed by suction or are curetted out in pieces with the Bovie snare. Thorough excochleation is usually not possible or advisable, since attempts to accomplish this will increase the chances of infection.

The flaps of septum are then put together, oxidized cellulose is applied to prevent bleeding, and petrolatum strips are placed on both sides of the septum. No earlier than six weeks after surgery, radium is applied to the surface of the remnant of the tumor for complete destruction and to prevent regrowth. The tumor can be reached in the open sphenoidal cavities at any time that declining vision arouses suspicion of recurrence.

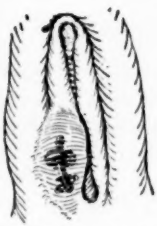
Meningitis, the outstanding complication of the operation, can be prevented by suction and antibiotics. Leaking of cerebrospinal fluid and excessive bleeding are rarely problems.

Treatment of Bartholin's Cysts

JAMES S. KRIEGER, M.D., AND GEORGE CRILE, JR., M.D.

INCISION and catheter drainage of Bartholin's cysts, acute or chronic, is an office procedure that preserves the function of the gland.

In the technic described by James S. Krieger, M.D., and George Crile, Jr., M.D., of Cleveland Clinic, Cleveland, local anesthesia is used. The cyst is incised and a small mushroom catheter is inserted into the cavity (see illustration). The catheter is cut off close to the skin, a small safety pin being used to prevent retraction into the cyst. The catheter provides adequate drainage, is nonirritating, and is left in place until epithelialization is complete, usually within two to four weeks. Patients become used to the catheter.



Catheter drainage of cyst

The only complication observed is inadvertent removal of the catheter before the drainage tract is well established, with resultant closure. When this difficulty arises, catheter drainage is repeated when the cyst recurs.

Bartholin's cysts. Cleveland Clin. Quart. 19:72-73, 1952.

Basic mechanism of pseudocyesis is conversion of anxiety over conflict of sex drives and early teaching.

Pseudocyesis: Psychosomatic Aspects

ROBERT R. SCHOPBACH, M.D., PAUL H. FRIED, M.D., AND A. E. RAKOFF, M.D.
Jefferson Medical College and Hospital, Philadelphia

THE condition in which a nonpregnant woman believes herself to be pregnant and in which some of the signs and symptoms of pregnancy develop seems to be more closely related to hysteric phenomena than to deeper psychosomatic disturbances.

In a study of 27 such patients, representing 1 in 250 maternity clinic admissions, Robert R. Schopbach, M.D., Paul H. Fried, M.D., and A. E. Rakoff, M.D., find that psychic factors may stimulate body changes directly and also indirectly through the endocrine system. Thus, the anterior pituitary gland mechanisms are affected by the hypothalamus, producing luteotrophin which is responsible for persistent ovarian luteinization. The resulting secretion of progesterone with the normal or increased levels of estrogen inhibits production of follicle-stimulating hormone.

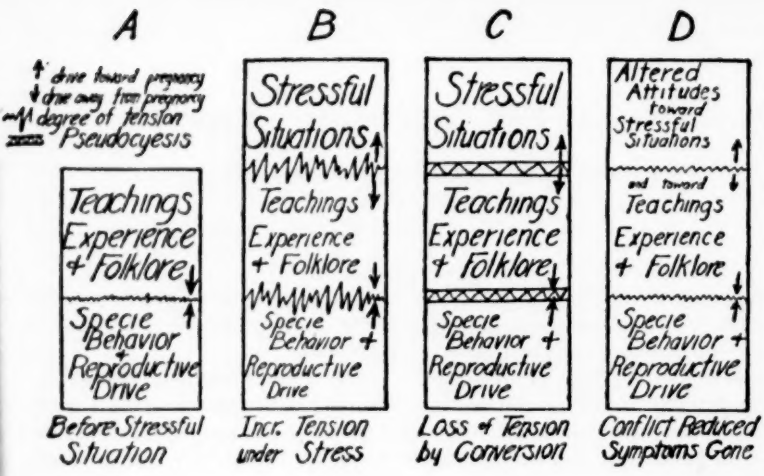
The most common initial symptom is menstrual disturbance. Most of the patients have breast changes with secretion and describe fetal movements, appearing as early as the first month. The cervix is often softened and the uterus enlarged to the size of a six-month pregnancy. In the patients examined, at least one physician had made a diagnosis of pregnancy in each case.

The *endocrinologic survey* revealed [1] decreased urinary gonadotropins, [2] normal or increased estrogen titers, [3] progesterone activity, [4] usual levels of urinary 17-ketosteroids, and [5] evidence of lactogenic activity.

Psychic factors active in pseudocyesis are analyzed diagrammatically in the illustration. An inherent drive toward reproduction, modified by experiences and teachings, may influence behavior. Definite negative conditioning in the sexual sphere results from unsatisfactory early family relationships producing insecure and potentially neurotic individuals and from folklore, knowledge of illness or death related to childbearing, exaggerated sexual prohibition, or unfortunate sexual experiences.

Intense conflict between the positive basic drive and later negative conditions may inhibit satisfactory sexual expression *(A)*. Additional stresses aggravate the unstable situation. The individual is unable to handle the increased tension *(B)*, and bodily complaints develop *(C)*. The nature of the psychoso-

Pseudocyesis: a psychosomatic disorder. Psychosom. Med. 14:129-134, 1952.



matic responses varies with the precipitating circumstances.

Many previous studies have stressed the occurrence of pseudocyesis in the unmarried. All the 27 patients studied were married and living with their husbands. In all cases, the domestic situations were such as to make pregnancy desirable. Pregnancy would [1] secure the husband's waning affection and strengthen a faltering marriage in 10 cases, [2] prove the ability to conceive and become a complete woman in 5 cases, [3] obtain a child as an immature plaything and companion in 5 cases, [4] achieve parity with other women, particularly close friends, in 4 cases, and [5] effect self-punishment and appease guilt feelings arising from aggressive impulses in 2 cases.

All had low frustration tolerance, inability to resolve tension, and difficulty in interpersonal relationships. Pseudocyesis served a unique purpose in each case, but obscured the real cause of the anxiety and fostered a dependence which the women could not accept consciously.

Therapy should unmask the operative mechanism, giving the patient superficial insight into the forces involved so that she can cope with the conflict.

Symptoms disappeared for 13 of the 27 patients after accepting the true diagnosis, but the condition recurred in a few months. Psychiatric history taking was also ineffective.

In 13 cases, superficial psychotherapy was curative in 6, effectual when combined with testosterone injections or curettage in 5, and indeterminate in 2 who failed to return. Testosterone injections and curettage without psychotherapy occasionally caused a remission but the syndrome always recurred. Testosterone probably depresses the estrogens with a resulting full menstruation, thus proving to the pa-

tient that she is not pregnant. Curettage may be effective by showing the patient the womb is empty.

Thorough reconstruction of the basic personality was not attempted. The least therapy seemed necessary when the conflict was most conscious. In most cases the patient's desire to be rid of the symptoms accelerated therapy.

Cataract and Retinopathy in Diabetes

WILLIAM G. MARR, M.D.

CAREFUL regulation of diabetes in juvenile patients reduces the incidence of cataracts, but the duration of the disease seems the chief factor in the development of retinopathy.

The 61 young patients studied by William G. Marr, M.D., of Johns Hopkins University, Baltimore, had diabetes before the age of 13 years. All are receiving insulin under strict dietary management and probably, as a group, have better than usual control of diabetes. None has a cataract.

Retinopathy can be classified as follows:

Grade I—Slight: 1 to 20 microaneurysms or 1 to 10 patches of exudate per fundus, or both.

Grade II—Moderate: 20 or more microaneurysms and retinal hemorrhages or 10 or more patches of exudate per fundus, or both.

Grade III—Advanced: as in grade II with new retinal capillaries and retinitis proliferans and complications.

Among the 61 patients, only 2 of 37 who have had diabetes for less than ten years have retinopathy. Both have grade I fundi. One has had diabetes for six years, the other for nine. Control is fair in one case and good in the other.

Of 24 patients with duration of diabetes of ten years or more, 13 have retinopathy. The distribution of fundi in the total 48 eyes is: normal, 24; grade I, 18; grade II, 2; and grade III, 4. If these results are analyzed in relation to [1] good, [2] fair, or [3] poor control of diabetes, grade I fundi occur in all 3 groups, and grade II are limited to patients with poor control.

Grade III fundi exist in 2 patients. One is a 24-year-old man who has had diabetes for twenty-one years and has an insulin requirement of 85 units daily and fair control. The other is a 25-year-old woman with diabetes for sixteen years who requires 104 units of insulin daily; control was poor for the first eight years and good for the last eight. During the past year, the retinopathy had changed from grade I to grade III.

Cataracts and retinopathy in juvenile diabetics. Am. J. Ophth. 35:577-582, 1952.

For good function, soft tissue damage with Colles' fracture should be treated during healing of the bone.

Complications of Colles' Fracture

MILAND E. KNAPP, M.D.
University of Minnesota, Minneapolis

POOR results from treatment of Colles' fracture are usually not caused by inadequate reduction, but are the consequence of failure to recognize the importance of soft tissue damage as a cause of disability, states Miland E. Knapp, M.D.

Disimpaction should be done as gently as possible. Since immobilization must often be in a position of exaggerated volar flexion in which normal function is almost impossible, the wrist should be put in as nearly a straight line as is consistent with maintenance of reduction. Functional position should be restored as soon as possible, usually within two weeks.

Probably the most frequent cause of disability is the fibrosis of soft tissues after prolonged swelling. If the hemorrhage and edema fluid accompanying nearly all fractures are not removed by absorption within seven to ten days, organization proceeds rapidly, with formation of fibrous bands. Adhesions near the joint cause painful motion and limit movement and may interfere with circulatory and lymphatic return flow.

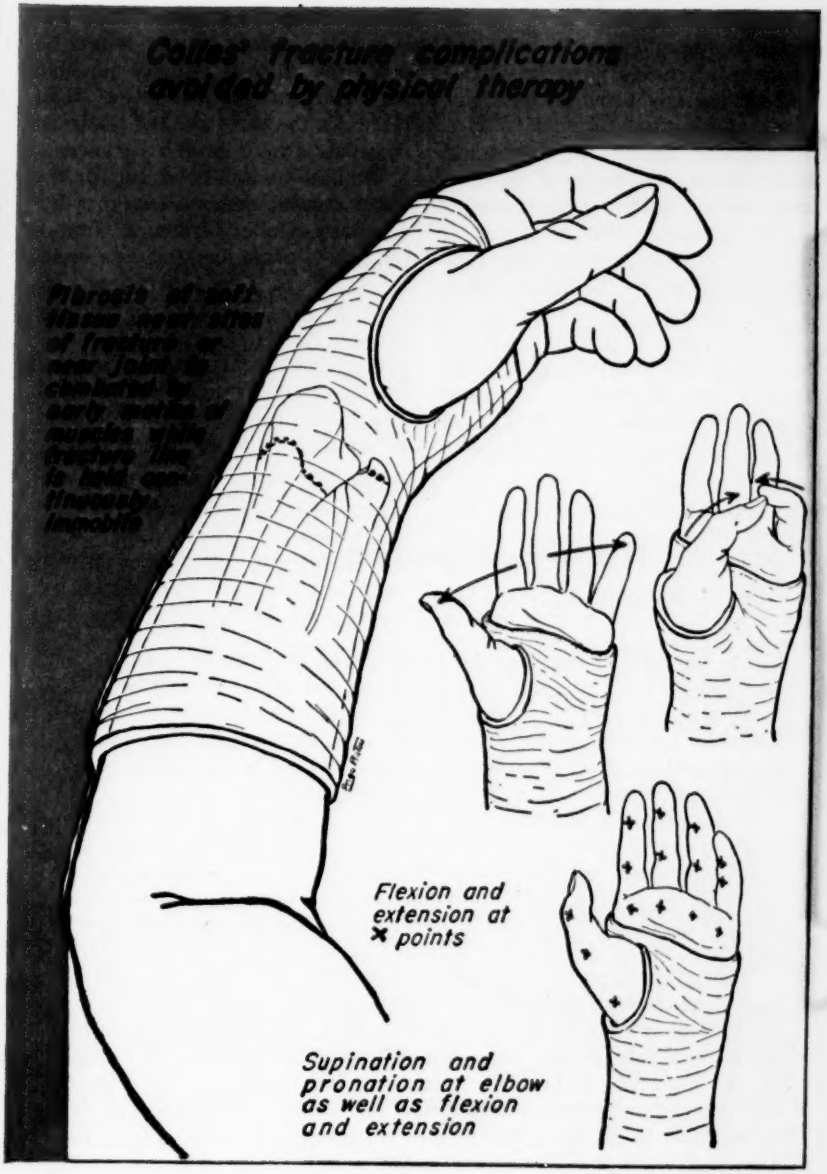
Since organization is simultaneous with bone healing, treatment for soft tissue damage must be done during healing. The best method for removing edema fluid is motion of the muscles, started as soon as the fracture is reduced. Muscle movement and fracture immobilization can both be accomplished if a well-fitted but unpadded plaster splint or cast is applied after adequate reduction and is then trimmed for function.

The cast must be cut back to the flexion crease in the palm and behind the knuckle joints on the dorsum of the hand. The thumb should be freed so that opposition, flexion, and extension are possible. Trimming at the elbow permits flexion and extension, also pronation and supination if desired.

The patient must understand that the hand is to be used for ordinary daily activities and even for work, except heavy lifting and immersion in water. Use of a sling should be discouraged, since activity is more likely if the hand is constantly available. Shoulder disability from immobilization in a sling can be prevented by daily exercises—putting the hand behind the head and behind the back.

In late stages, after fibrosis is well established, the return of function is expedited by the use of heat, preferably by whirlpool baths, followed by massage to reduce

Treatment of some complications of Colles' fracture. J.A.M.A. 148:825-827, 1952.


Colles' fracture complications avoided by physical therapy
Fibrosis of soft tissue near sites of fracture or near joint is combated by early motion of muscles while fracture line is held continuously immobile
Flexion and extension at × points
Supination and pronation at elbow as well as flexion and extension

swelling, relieve pain, and stretch fibrous tissue and then by resistant exercises whenever possible. Occupational therapy provides excellent forms of exercise.

Sudeck's acute posttraumatic bone atrophy with swelling and pain occasionally appears after Colles' fracture. The condition is probably a reflex sympathetic dystrophy initiated by the injury. Spotty bone decalcification results.

If movement is started from the beginning, the complication is extremely rare. Even later the most effective treatment is activity, although recovery is slow. Occupational therapy is of great value, because the patient works longer at one time than is usually possible with conventional exercises. Heat increases the atrophy, but electrical stimulation may be of assistance.

Similar therapy is useful for the posttraumatic arthritis that may accompany Colles' fracture. Immobilization promotes the condition, especially in thin elderly patients who do not undertake painful exercises. After some months, roentgenograms reveal cartilage loss and bone decalcification in the joint. Frequent observation is important to see that active motion is done.

Acromioclavicular Dislocation

JULIUS S. NEVIASER, M.D.

FULL stability of the shoulder joint without loss of motion or strength may be attained after recent or old acromioclavicular dislocations. The clavicle is restored to position and kept there by provision of a new acromioclavicular ligament through the transference of the coracoacromial ligament, explains Julius S. Neviaser, M.D., of George Washington University, Washington, D. C.

The operation is performed through a slightly curved incision starting over the outer half of the clavicle at the anterior border and extended to the outer border of the acromion. The coracoacromial ligament as well as the acromioclavicular separation is exposed, and the dislocation is reduced. Reduction is maintained by a Kirschner wire, passed through the skin and acromion into the clavicle.

The coracoacromial ligament is removed from the coracoid attachment through osteotomy of a small portion of the broad base at the lateral border of the coracoid process. The ligament is turned over the acromion and fixed. Subsequently, the ligament is brought across the acromioclavicular joint onto the superior surface of the clavicle and anchored by catgut fixation through drill holes. The arm is strapped to the side. The wound is dressed and slow, passive motion of the shoulder done weekly. The wire is removed in five weeks.

Acromioclavicular dislocation treated by transference of the coracoacromial ligament. Arch. Surg. 64:292-297, 1952.

Spinal anesthesia is safe if contraindications are observed and careful technic is followed.

The Don'ts of Spinal Anesthesia

BRUCE M. ANDERSON, M.D.
Stanford University, San Francisco

SKEPTICISM about spinal anesthesia should be dispelled. If the technic is carefully observed and the contraindications respected, the procedure is safe and entails no unavoidable complications except headache and backache in a few cases.

The safety of spinal anesthesia is demonstrated by the excellent results obtained by inexperienced physicians with the method for the last fifty years. The chief difficulties, states Bruce M. Anderson, M.D., stem from improper choice of method or careless administration.

The don'ts of spinal anesthesia may be summarized as follows:

Don't give spinal anesthesia to a patient who doesn't want the technic unless that form of anesthesia is definitely indicated over all others. Sometimes the patient's only objection is to being awake during the operation. This problem is easily solved. The surgeon's objections should be respected also, but the anesthesiologist's judgment and experience are the final deciding factors.

Don't give spinal anesthesia to patients with coronary artery disease, pronounced arteriosclerosis, valvular heart disease, aortitis, or severe hypertension. Abrupt compensations in the cardiovascular system, required with spinal anesthesia, are often impossible with such lesions.

Don't give spinal anesthesia to a patient in shock or with a hemoglobin below 8 gm. per 100 cc. The procedure increases the vascular pool, creating a large area for the diminished hemoglobin to supply with oxygen.

Don't give spinal anesthesia to a patient with a distended, obstructed bowel. Sudden release of tension in the gut may precipitate vascular collapse; vomiting and aspiration of gastrointestinal contents are likely.

Don't use spinal anesthesia for surgical operations above the diaphragm.

Don't give spinal anesthesia to patients with active central nervous system disease, including meningitis, multiple sclerosis, progressive muscular dystrophy, herpes zoster, or spinal cord tumor.

Don't give spinal anesthesia to patients who have had poliomyelitis, syphilis, or lesions of the spinal column including bone infection or fractured vertebra. Harm is not likely in such cases, but the form of anesthesia used may be blamed

The *don'ts* of spinal anesthesia. California Med. 76:261-262, 1952.

for any later development. Spinal anesthesia should be employed, however, for lumbar laminectomy, especially in large heavy-set men.

Spinal anesthesia is not advisable in cases of pernicious anemia. Regional anesthesia is frequently preferred for diabetic patients.

Don't give spinal anesthesia to extremely obese patients, especially if the Trendelenburg position is to be used.

Don't give spinal anesthesia to patients with furunculosis or dermatitis. If the procedure must be used in such cases, avoid the infected areas during injection.

Don't give spinal anesthesia in the presence of persistent paresthesia.

Don't give spinal anesthesia if pain is out of proportion to the suspected disease.

In giving spinal anesthesia, technical don'ts to be observed are as follows:

Don't use corrosive solutions to sterilize the ampules.

Don't inject through infected areas.

Don't inject if blood is aspirated when the tap is made.

Don't use concentrated solutions. The maxima are: tetracaine, 0.5%; procaine, 5%; Metycaine, 4%; and Nupercaine, 0.1%.

If aspiration is difficult when the tap is made, or if the desired height of anesthesia is not obtained on introduction, spinal block by a tumor is a likelihood. Any injected agent should be washed out with normal saline solution. This should also be done if pain is experienced after the injection of the anesthetic agent.

¶ LEFT ATRIAL ENLARGEMENT is best visualized with barium in the esophagus and a left lateral teleroentgenogram. In this view the enlarged atrium impinges on the middle one-third of the barium-filled esophagus, causing obvious narrowing and posterior displacement of the esophageal shadow. Comparison of the commonly accepted right anterior oblique with the left lateral view was made by Harold G. Jacobson, M.D., and associates of the Veterans Administration Hospital, Bronx, in 49 cases of rheumatic and 1 of arteriosclerotic atrial enlargement. Diagnostic superiority of the left lateral film was demonstrated in 78% of cases, equal diagnostic value in 16%; the right oblique view was superior in only 3 cases. In no instance was enlargement seen in the right oblique and not in the left lateral film. Adequate roentgen examination of the heart for atrial enlargement, as well as film economy, may be achieved by using only a posteroanterior and a left lateral exposure. These positions are less subject to technical error than others and are easy for the patient to maintain. In addition, right ventricular enlargement may be appraised by diminution of the retrosternal space in the lateral view.

Am. Heart J. 43:423-436, 1952.

Diagnosis of silent prostatism is not difficult if the condition is considered during urologic examination.

Unrecognized Prostatic Obstruction

VERNON S. DICK, M.D.
Lahey Clinic, Boston

OBSTRUCTION at the vesical neck may develop insidiously and pass unrecognized until serious, often irreversible damage has been done to bladder and kidneys.

Benign hyperplasia, fibrous contracture, and carcinoma, the three main causes of prostatic obstruction, can occur without obvious symptoms. The lesion may not be found until medical advice is sought because of gastrointestinal disorder, severe anemia, or a lower abdominal mass or until a thorough medical examination is made, states Vernon S. Dick, M.D. The following is a résumé of 16 cases:

Urinary retention is usually not complete but a slight increase in urinary frequency occurs with a weak stream and disturbances of control varying from slight terminal dribbling to definite enuresis.

The bladder is usually much distended, but less than half the patients have signs of uremia with dehydration and acidosis. Prostatic enlargement is generally found, but fibrous bladder neck contractures can cause obstructive pathologic changes.

The blood nonprotein nitrogen is significantly elevated, and hemoglobin is usually low. The urine is not often infected, but frequently contains a small amount of albumin and an occasional red or white blood cell or cast in the sediment.

Plain roentgenograms of the abdomen reveal little of importance save presence or absence of calculi, and the intravenous urograms show either no excretion of dye or hydronephrosis and hydroureters.

The mechanism of development of this silent obstruction is probably a conscious or an unconscious stifling of the original irritative symptoms of prostatism. With a very gradual increase in the degree of obstruction and amount of residual urine, the sensory components of bladder innervation are numbed. Tremendous distention of the bladder then may cause no sensation other than discomfort in the lower abdomen, and the urge to void may be greatly reduced. Because the urine usually remains uninfected, symptoms are lacking. Symptoms of other diseases may distract attention from the urinary tract.

The diagnosis of asymptomatic prostatism is not difficult if the condition is considered and ordinary means of urologic study are employed. Excretory urography is a definite diagnostic aid when even few indications are present, provid-

Unrecognized prostatism. J.A.M.A. 148:925-928, 1952.

ed the patient's renal function is adequate.

Since the urine is frequently sterile, to avoid infection and the production of bleeding or complete retention, probably catheterization should not be done in the office. Such studies can be deferred until hospitalization.

Treatment is the same as for any prostatic obstruction with severe vesical and upper urinary tract damage. Suprapubic cystotomy and prophylactic bilateral vasectomy, using local anesthesia, allow the renal function to improve before prostatic resection is performed. Suprapubic drainage obviates the introduction of infection often attending urethral catheter drainage. The chronically distended bladder is then allowed to empty rather slowly, so that hematuria does not appear.

Renal function is further improved by supplying adequate fluids and counteracting the acidosis with alkalis. The anemia, caused by depressed bone marrow function, is corrected with transfusions. If infection is present, appropriate antibiotics and chemotherapy are employed as indicated and permitted by renal function.

Prostatectomy is done when the blood nonprotein nitrogen level returns to normal or becomes stabilized, if the patient's general condition allows any type of surgery. Transurethral resection probably is followed by a smoother postoperative course than an open operation.

¶ NONGONOCOCCIC URETHRITIS may be effectively treated with terramycin. The antibiotic was given to 20 male patients, including 2 with Reiter's disease, and to 6 of the patients' female consorts. Of these, 20, including the 2 with Reiter's disease, had inclusion bodies in Giemsa-stained urethral scrapings before treatment. Both men with Reiter's disease also had pleuropneumonia-like organisms in the scrapings. R. R. Willcox, M.D., of St. Mary's Hospital and G. M. Findlay, M.D., of the School of Pharmacy, London, report that from 3 to 19.25 gm. of terramycin given orally for a period of four to fourteen days brought improvement in 96% of cases. Pleuropneumonia-like organisms disappeared immediately in both cases of Reiter's disease, although 1 of these patients was refractory to therapy and continued to have inclusion bodies. The inclusion bodies persisted in another case although the patient improved. No recurrence was seen; observations were continued for over four months after treatment in some cases.

Pub. Health Rep. 67:196-199, 1952.

¶ REITER'S DISEASE, said to affect only men, was observed in a middle-aged woman by Solomon Rinkoff, M.D., of New York City.

J. A. M. A. 148:740-742, 1952.

Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

The Background of Coronary Disease*

Comment invited from
S. H. May, M.D.
Joseph M. Barker, M.D.
Wallace M. Yater, M.D.

► TO THE EDITORS: In the Medical Forum on the article by Drs. Menard M. Gertler, Stanley M. Garn, Samuel A. Levine, and Paul D. White (*Modern Medicine*, Dec. 1, 1951, p. 103), a good deal of discussion revolved around the testing of the coronary competency by induced transient electrocardiographic changes. Great stress was laid on the diagnostic value of these tests. There is, however, enough justification to question their validity from a theoretic and practical viewpoint.

The induced changes in the electrocardiogram are allegedly due to anoxemia of the myocardium. The first manipulated alterations in the electrocardiograms of men were produced by gradually lowering oxygen intake in the rebreathing chamber. But it was soon found that identical changes could be brought about by epinephrine and a multitude of different agents such as medical and toxic chemicals, systemic diseases, normal and abnormal intermediary metabolic products, thermal stipulations, fluctuations in rhythm and respiration, the intake of a meal, and even emotional stress.

As of today, it is purely a matter of speculation how much anoxemia, endocrine or enzymatic factors, electrolytes or metabolites, central or autonomous nervous influences, or any unknown quantity contributes to the activation of the electrical mechanism which depresses the S-T segments and flattens the T waves. If anoxemia were the only responsible factor, how can it be explained that on occasion an exhausted and dying heart does not exhibit any electrocardiographic features generally ascribed to anoxemia?

When one considers these facts, it is obvious that the characteristic reactions to low oxygen or exercise cannot be attributed to anoxemia exclusively. Moreover, the implication of the coronary circulation in this complex electrocardiographic reaction is hypothetic at best. Therefore, no theoretic validity should be attached to any procedure which supposedly tests the coronary competency by induced anoxemia.

Even so, it would seem possible

*MODERN MEDICINE, Sept. 15, 1951, p. 72.

that a long and extensive experience with these tests could establish some valid contribution empirically. This however appears not to be the case. The criteria proffered for the evaluation of the tests by various investigators show a surprisingly wide discrepancy. This testifies to the lack of security and to a lack of scientific accuracy as well. It seems a herculean task indeed to try to disentangle and judge the respective significance of anoxemia, stress, rate acceleration, respiration, and emotion in any such test. The confusion is illustrated by the attempt to secure better information by injecting ergot intravenously despite the fact that ergot itself is known to change the contour of an electrocardiogram.

The anoxemia test proposed by Dr. R. L. Levy involves the breathing of a 10% oxygen mixture for twenty minutes without the benefit of a gradual acclimatization to this rather dramatic procedure. Patients suspected of coronary disease are thus "catapulted" from sea level to a quasi altitude of 17,000 ft. Individual reactions to this jolt vary widely, as evidenced by the divergent arterial oxygen saturation.

Individual susceptibility to altitude is well known in aviation medicine. It testifies to the individual efficiency of the mechanisms which control blood oxygen tension and acid base equilibrium. These mechanisms seem to be better trained in elderly or sick subjects owing to their more frequent exposure to the stress of low oxygen. German experiments in low pressure chambers during World War II confirmed that the tolerance to altitude uniformly increases with advancing age.

In 1939, I studied the electrocardiographic response to gradually induced oxygen deficiency in normal hearts in various age groups. It was found that the extent of electrocardiographic changes was far higher in the younger than in the older age groups, ranging from 75% in the teens to 16% after the age of 50. Would it be possible that these sharp T-wave reductions and S-T depressions in the young signify heavier outpouring of adrenalin? This linear drop in the degree of electrocardiographic response with advancing age seems in strange contradiction to the criteria laid down by the proponents of the anoxemia test.

The Master 2-step test is based on the effect of a calibrated exercise on the electrocardiogram. It does not matter in this procedure whether the exercise is performed by a trained athlete or a feeble, asthenic subject. But logically it does matter. The same given effort which may be exhausting for the clerk may be trivial for the laborer, even when multiplied. Any number of conditions like emphysema, anemia, and basal metabolic rate ought to be evaluated in each case before comparison of a reaction to a standardized exercise seems feasible. A reasonable comparison could be attained only by measuring out equal amounts of energy expenditure by oxygen consumption, although the unknown quantity of emotional stress from anxiety

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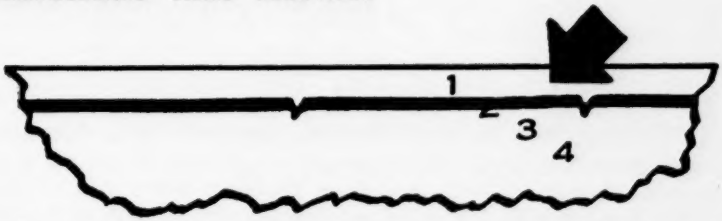

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or apprehension would still be a disturbing factor. The cardiac and respiratory acceleration after exercise makes the subsequent electrocardiographic changes even more confusing than in the anoxemia test.

Dr. Master admits that, on occasion, a false positive 2-step test is observed on the basis of automatic imbalance or emotional instability. Dr. E. Corday acknowledges that experiences with 675 patients within five years revealed false negative tests in 11 patients who suffered myocardial infarction within one year—which is a surprisingly large number of errors indeed!

Very infrequently one encounters in functional tests an alteration of the electrocardiographic pattern which is characterized by extraordinary features superimposed on the expected changes of S-T depression and T-wave reduction. These changes are of a bizarre and paradoxic nature, pertaining to the PR or QRS intervals, to the main deflection, to the S-T segments and T waves as well, as for instance, a reversal of a previously inverted T wave or an elevation of a previously depressed S-T segment.

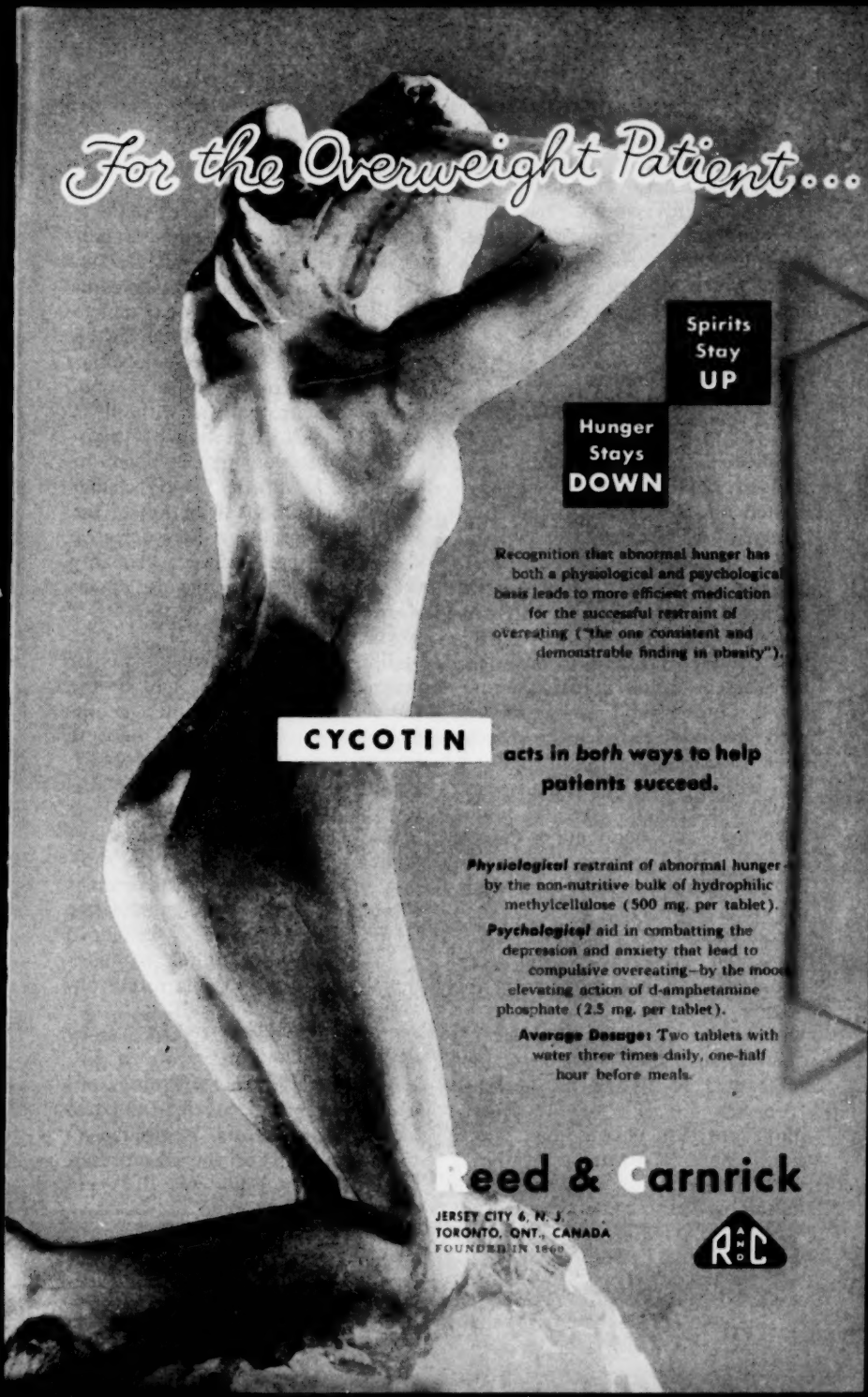
I have called these changes discordant, to distinguish them from the usual concordant type. Logically, such reactions should be ascribed to lesions in the sinoauricular node, in the bundle of His or to myocardial fibrosis. They do not attest to the functional competence of the coronary circulation or to coronary insufficiency; they are simply proof of the unbalancing of the electrical forces by organic lesions which already have taken place in the past.

Most of these cases do not require coronary testing. They will be diagnosed by history, clinical examination, and the multiple lead electrocardiogram. I agree with Dr. Paul D. White, who states that only rarely are such tests necessary.

The very few instances of the discordant type which may be recorded only by manipulations of the electrocardiogram can usually be detected by the effects of deep respiration, by positional changes, or by a postprandial electrocardiogram.

It is therefore concluded that procedures alleged to test the coronary competence by induced transient electrocardiographic changes are not compatible with physiologic principles and scientific accuracy. Their execution may be hazardous. Their interpretation is fallacious and there is a risk that people with normal hearts are thus made cardiac patients with all the psychologic, social, and economic implications; by accepting a negative result a patient's awareness may be lulled when, in reality, the imminence of a cardiac catastrophe looms large. The necessity for a thorough diagnostic evaluation based on accepted principles is in no way reduced by such procedures; but in stressing their significance they may be dangerously misleading.

S. H. MAY, M.D.
New York City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► TO THE EDITORS: Coronary arteriosclerotic heart disease has numerous manifestations, exacerbations and remissions, and sometimes most unusual features. The data upon which a diagnosis is based may be divided into the following categories:

1] Symptomatology
2] Physical findings
3] Electrocardiography
4] Teleoroentgenography
5] Differential diagnosis

Since space will not permit a full analysis of this subject, we have limited our discussion to the third category—electrocardiography.

Abnormalities of the electrocardiogram are not per se diagnostic of coronary artery disease. Interpretation of the form of the ventricular complex must be made in the light of the entire clinical picture. On the other hand, some patients with severe coronary artery disease have electrocardiograms that are well within limits of normal. Some physicians tend to interpret minor deviations and conduction defects as indicating coronary disease. In an asymptomatic individual without other supporting evidence such a conclusion is not justified.

Angina pectoris—In the exertional type of angina pectoris the resting electrocardiogram may be within normal limits. Nonspecific changes such as T-wave inversions in leads I or II and in the leads from the left side of the precordium are not uncommon. Sometimes there is inversion of the T wave in lead I only, with or without flattening of this deflection in leads V_5 and V_6. A flat or inverted T wave in lead II is probably abnormal in patients with angina pectoris.

Since many of these patients have long-standing essential hypertension, findings due to left ventricular hypertrophy are not uncommonly seen. Incomplete or complete right or left bundle-branch block or other defects of intraventricular conduction are sometimes found. QRS alterations with or without T-wave changes suggesting old myocardial infarction may be seen.

During an attack, T-wave changes with or without deviation of the RS-T segment from the isoelectric level are often observed. Probably the commonest change is downward displacement of the RS-T segments in leads I or II, or both, and in all the precordial leads or in the leads from the right or the left side of the precordium. In other instances, the T waves become inverted in the leads mentioned. Rarely there is upward displacement of the RS-T segments in these leads. Downward RS-T displacement or T-wave inversion or, rarely, upward RS-T displacement sometimes appears in leads II or III or both, and in V_F. A record of a spontaneous attack of exertional angina pectoris is rarely obtained.

In patients with a typical history who are 50 or more years of age, any nonspecific electrocardiographic changes may be ascribed to coronary arteriosclerosis. Normal electrocardiograms or the absence of other abnormal findings does not rule out the condition.

When the electrocardiogram is within the limits of normal it is

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*Talkov, R. H., Ropes, M. W., and Bauer, W.: *The Value of Enteric Coated Aspirin.* N.E.J. Med. 242.19 (Jan. 5) 1950.

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1. Gordon, R. A., and Morton, M. V.: Anesthesiology 12:680 (Nov.) 1951.
2. Smith, G.: GP 5:61 (Apr.) 1952.
3. Pickrell, K. L.; Stephen, C. R.; Broadbent, T. R.; Masters, F. W., and Georgiade, N. G.: In Press.

sometimes necessary to try to induce an attack by having the patient perform exertion which ordinarily would precipitate pain and to record any electrocardiographic changes. In the physician's office, the patient has a certain security, and hence the emotional factor is often absent. As a result he may be able to perform many times the amount of exercise without experiencing pain.

Because of the risk of myocardial infarction or sudden death, exercise tests should be limited to persons under 40 years of age because of the obvious implications of the diagnosis. Patients 40 through 49 years of age may elect to have the procedure performed after an explanation has been given, but age is not a factor when the resting electrocardiogram is normal and the individual is in a "key position"—that is, when a question of military service or benefits, application for insurance or question of insurance benefits, or other litigations are involved. The test may be extremely important in cases with atypical symptoms.

A positive test consists of any of the changes described above. When pain is present, minor deviations from the normal become more significant. A negative test—the absence of any electrocardiographic changes during an induced attack—does not exclude the presence of coronary arteriosclerosis.

Between attacks of angina decubitus, the electrocardiogram may be normal or may show any of the nonspecific changes described for exertional angina pectoris. During an episode of pain, alterations similar to those recorded after exercise in patients with exertional angina may appear. Sometimes the electrocardiogram remains normal or does not deviate from that recorded when the patient is free of symptoms. In a few individuals one may be able to demonstrate that an ectopic rhythm such as paroxysmal auricular or ventricular tachycardia, auricular flutter, or fibrillation is responsible for the episodes.

Myocardial infarction—When typical alterations are seen in the form of the ventricular complex, the diagnosis of fresh and recent infarction can be made by serial electrocardiograms alone. Fresh infarctions, from a few hours to a few days old, are characterized by upward displacement of the RS-T segments. In recent infarctions—one day, weeks, or even months old—abnormal Q waves or QS deflections appear, the RS-T segments return to the isoelectric level but display an upward convexity, and the T waves become deeply and symmetrically inverted. In old infarction—one month or years old—the QRS changes persist but the T waves gradually return to the upright position. In the earliest stage of fresh infarct without QRS changes, the differentiation from pericarditis is made by the clinical course and the subsequent tracings. These electrocardiographic characteristics must be correlated with the clinical history to establish the exact time that the infarct occurred. For example, the electrocardiographic findings of recent my-

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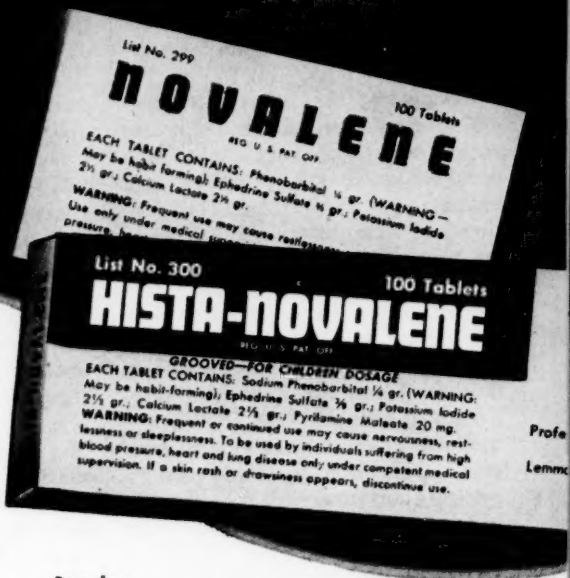

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ocardial infarction may persist for years.

Abnormal Q waves or QS deflections without T-wave changes nearly always indicate that an infarct occurred months or years before. The history nearly always discloses the exact time. Abnormalities of the kind in question have occasionally been recorded in patients without any symptoms or signs of heart disease. It is then extremely unlikely that infarction has occurred.

The location and extensiveness of myocardial infarction are best shown by the electrocardiogram. The larger the infarct, the greater the number of leads that will exhibit QRS abnormalities. Depending upon the lead showing abnormal Q waves or QS deflections, infarcts may be classified as:

1] Anteroseptal: leads V_1 through V_3 or V_4

2] Anterolateral: leads V_4 through V_6

3] Midanterior: leads from the midprecordium

4] High anterolateral: QS or abnormal Q waves (0.04 second or more) and upwardly convex RS-T segments and inverted T waves in lead V_L. The standard precordial electrocardiogram may remain normal or exhibit inverted T waves in one or more leads. Occasionally there are questionable QRS changes; in a few instances the standard precordial electrocardiogram is entirely normal. In such cases, leads from higher levels on the anterolateral chest wall, made higher 1, 2, and 3 interspaces, respectively, in the lines of the standard precordial leads, disclose the diagnosis.

Myocardial infarction with only T wave changes occurs. When the anterior wall is involved, there are upwardly convex, isoelectric RS-T segments and deeply inverted, symmetric T waves in all or nearly all the leads comprising the precordial electrocardiogram. In posterior infarction, this kind of RS-T segmental alterations and T wave inversions are seen in leads II, III, and V_F. In either case, the T waves gradually become upright within several months.

Posterior infarction shows these changes in leads V_F, III, and/or II. A Q wave of 0.04 second or more in lead V_F strongly suggests posterior infarction.

Posterolateral infarction shows these changes in leads V_F, III, and/or II and the leads from the left side of the precordium.

Posteroinferior infarction gives the same changes as plain posterior infarction, but in addition lead V_E also exhibits diagnostic changes.

High posterolateral infarction shows the diagnostic changes in lead V_L. All leads from the anterolateral chest wall, including those from higher levels, remain normal. Leads from the left posterior chest wall display progressive changes in serial tracings.

Myocardial infarction may be complicated by right bundle-branch block. The QRS, RS-T, and T-wave changes of both anterior and posterior infarction are not concealed, but may be slightly modified.

In cases of myocardial infarction complicated by left bundle-branch block, the changes in the ventricular complex are nearly always concealed. When the QRS complexes are small, characteristic

RS-T segmental displacement and T-wave inversions may be found in a series of tracings. If the infarct involves the interventricular septum, abnormal Q or QS deflections may appear.

In cases of myocardial infarction complicated by local intraventricular block, there are the signs of infarction, usually posterior, the QRS interval is more than 0.10 second, and neither right nor left bundle-branch block is present. Transient QRS changes or transient bundle-branch block may occur.

Persistent displacement of the RS-T segments presenting signs similar to those of fresh infarction after months or years usually indicates that ventricular aneurysm is present.

Reciprocal (or confirmatory) QRS, RS-T, and T-wave changes of both anterior and posterior infarction have been omitted from this discussion.

Subendocardial infarction is indicated by downward RS-T displacement and sometimes abnormal Q waves in several or all of the precordial leads. In days or weeks, the RS-T segments return to the isoelectric level and the T waves become inverted. Posterior infarction must be excluded. Such findings are rarely present in leads V_F, III, and/or II.

Myocardial infarction sometimes occurs without any electrocardiographic manifestations. If the patient has all the typical physical findings and symptoms of this condition, the electrocardiogram very rarely does not show some change. It is fair to assume that the infarct is not a large one, provided frequent tracings fail to display any deviation from the control.

Silent myocardial infarction occurs without pain. Serial electrocardiograms exhibit the characteristic QRS and T-wave changes as described. This is extremely rare and occurs in the older age group.

In some cases of known infarction, both QRS and T-wave changes regress so that after several months or years the electrocardiogram is well within normal limits. More often some residual changes will remain.

Multiple infarcts occur in almost any conceivable combination. The electrocardiograms of these are often quite complex.

JOSEPH M. BARKER, M.D.
WALLACE M. YATER, M.D.
Washington, D. C.

Therapeutic Efficacy of Electrocoma*

Comment invited from
Zigmond M. Lebensohn, M.D.
Max E. Witte, M.D.
LeRoy P. Levitt, M.D.

► TO THE EDITORS: The indications for electroshock therapy as set forth by Drs. Joseph L. Fetterman, Victor M. Victoroff, and Jack B. Horrocks in their thoughtful paper are so well stated that it would be difficult for any practicing psychiatrist to take exception to their conclusions.

Depression remains the chief symptomatic indication, whether it

*MODERN MEDICINE, Feb. 1, 1952, p. 111.

occurs in an involutional, manic-depressive, schizophrenic, or even reactive setting.

In my experience, electroshock therapy has also proved of inestimable value in three conditions:

1] *Acute undifferentiated psychotic reactions following surgery or acute febrile illness*—For several patients, long-term institutionalization has been avoided by immediate application of shock therapy.

2] *Severe neurotic depressions of long duration which have been stubbornly resistant to psychotherapy*—Following electroshock, psychotherapy must be continued, and the patient is then more accessible to the psychotherapist.

3] *Hypomanic states and the manic phase of manic-depressive psychosis*—Electroshock shortens the manic phase and prevents dangerous exhaustion which may otherwise become a serious complication.

I notice that the authors employ the term "electrocoma," apparently considering it less disturbing to the patient's sensitivities than the more commonly used term "electroshock." I doubt seriously if this coinage has any semantic or psychologic advantage and the unexplained term "electrocoma" may be confusing to the uninitiated medical man.

The authors deserve great credit for emphasizing that electroshock therapy is not an isolated procedure and that it must always be combined with medical, physical, and *psychotherapeutic* procedures for maximum effectiveness.

ZIGMOND M. LEBENSOHN, M.D.
Washington, D. C.

"Ted has married the flower girl!"

► TO THE EDITORS: The article on electric shock therapy by Drs. Fetterman, Victoroff, and Horrocks is very well written.

First I would like to emphasize the authors' use of the word "electrocoma" instead of "electroshock," as I think the word "shock" is very unscientific.

I might emphasize that this treatment is primarily for depressions, particularly for those depressions called involutional, melancholia, and those coming on during the menopause; but such therapy also is very efficient in cases of manic depression, depressed type, and less efficient in psychoneurosis, reactive depression, which is a depression coming on with some cause in an individual who has a neurosis. Frequently in reactive depression supplementary insulin subcoma therapy is needed.

The effects on schizophrenia of the catatonic type are sometimes dramatic, but unfortunately the improvement frequently does not hold and it becomes necessary, after several courses of electrocoma treat-

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ment, to resort to brain surgery. Patients with hebephrenia and simple schizophrenia are rarely helped. In manic excitements, electrocoma may be necessary twice a day or oftener until the patient becomes quiet; then the routine of treatment every other day can be resorted to.

Electrocoma should not be given for every condition; it cannot help anxiety states, alcoholism, or psychopathic personalities.

There are two types of memory impairment induced by electrocoma therapy—loss of memory for present illness, which persists, and confusion of memory, which occurs during the treatment, is transitory, and disappears shortly after the treatments are stopped.

The only disadvantage I see to giving electrocoma on an out-patient basis is that occasionally an excitement follows treatment. This can be controlled by an injection of Sodium Amytal before the treatment.

MAX E. WITTE, M.D.
Independence, Iowa

► TO THE EDITORS: Much of the disagreement on the use of electroconvulsive therapy rests upon the personal philosophy and unconscious motivations of the person administering the therapy. The acceptance of the idea that there is a large area in our thinking and behavior which is out of our awareness and operates in spite of conscious intent is the beginning of a meaningful orientation to patients and their emotional disturbances. The rejection of this idea implies a denial of wanting to know and to understand the meaning and value of the patient's symptom and its role in the constant drive toward better mental health.

The physician has a powerful need to cure, heal, and alleviate, and out of this sometimes comes a form of magical therapy which is based on this personal need and not on the obscure pathology of the illness. This applies historically to all of medicine, not only to psychiatry. The anxiety of not being able to do *something* is often intolerable to the physician, and he usually finds *something*, be it a placebo or elective surgery.

Unfortunately, shock treatment, since its inception, has often fallen into the hands of magic makers and has been applied as a panacea to illnesses ranging from schizophrenia to senile psychoses. Patients and their families are often oversold on the idea of its miraculous efficacy. There is much embitterment when it fails, and all of psychiatry is repudiated.

The length of a single hospitalization can be reduced by the use of shock, but follow-up studies reveal that the shock-treated patients return to the hospital sooner than the patients not treated by shock, whose initial stay was perhaps longer. The depth of psychopathology cannot be indicated by a simple diagnostic label. There are as many kinds of schizophrenia as there are schizophrenic patients, and rarely do reports on electroconvulsive therapy take this into consideration. There is even greater variability in the criteria for the diagnosis of schizophrenia. All of this by way of saying that to use a diagnostic term as an indication for shock treatment is like saying

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that all patients with tuberculosis need a thoracoplasty.

Depressed, masochistically structured patients have a deep need for punishment to relieve their feelings of guilt. That the shock therapies do alleviate the symptom of depression can be interpreted on this basis. The patient feels that the shock is just retaliation for his feelings toward himself and others. The symptom temporarily abates until a life situation similar to that which provoked the depression in the first place again comes into operation. Shock treatment no more cures the depression than an aspirin cures a severe headache caused by a brain tumor.

In addition, other patients temporarily give up their symptoms out of fear of further treatment. In my past experience, these patients simply stop talking about their delusions in order to forestall further shock treatment, giving an impression of marked improvement.

Many patients with schizophrenia whose lives are a continuum of frustrating and frightening occurrences react to shock with intense fear. This heightened anxiety leads many times to lessened accessibility in a psychotherapeutic situation.

To another group of patients the old dictum, *post hoc, ergo propter hoc*, applies. Many manic patients will remit spontaneously, with or without shock therapy.

Psychotherapy in the sense of collaborative investigation with the patient to try to understand his trouble and how it relates to his life offers the best chance for permanent resolution of his symptoms.

LE ROY P. LEVITT, M.D.
Chicago

Doctor to Doctor

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1. Howard, J. E. Protein Metabolism During Convalescence After Trauma. Arch. Surg. 50:166, 1945.

2. Co Tui, Minutes of the Conference on Metabolism Aspects of Convalescence Including Bone and Wound Healing. Josiah Macy, Jr. Foundation, Fifth Meeting Oct. 8-9, p. 57, 1943.

3. Whipple, G. H. and Madden, S. C. Hemoglobin, Plasma Protein and Cell Protein: Their Interchange and Construction in Emergencies. Medicine 23:215, 1944.

4. Mulholland, J. H., Co Tui, Wright, A. M., Vinci, V., and Shafiroff, B. Protein Metabolism and Bed Sores. Am. Surg. 118:1015, 1943.

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Case MM-219

THE CLUE

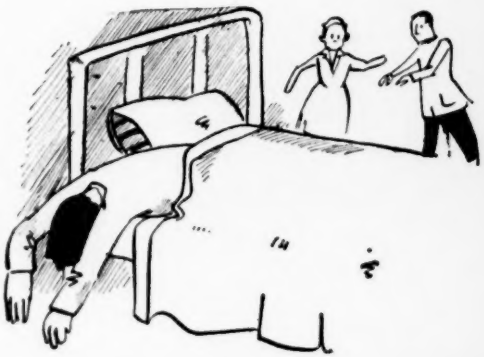
ATTENDING M.D: I should like you to see a patient in the surgical ward this morning. *(They walk past the large medical ward. There is a commotion; several nurses and an intern are huddled about a man who has fallen out of bed. The physicians turn to assist. The patient, who is unconscious, is lifted into the bed and examined by the intern. The Attending M.D. turns to the Consultant.)* I know this patient. He is a 20-year-old man with severe heart disease of ten years' duration; his symptoms have been progressive and the consensus is that he has Lutembacher's syndrome.

VISITING M.D: Perhaps we should stop here first; I am extremely interested in congenital heart defects. Let me see the chart. Go ahead and tell me the history as I skim through it.

ATTENDING M.D: He was in this hospital for a time at the age of 14. He had had dyspnea on slight exertion for four years. Walking a block on the level would severely incapacitate him. He coughed little, was only slightly cyanotic. The respiratory difficulty was progressive. Ankle edema was noted six months ago. After a cold last week he became refractory to mercurial diuretics and was admitted here. He was taking ammonium chloride and a low-salt diet.

VISITING M.D: Early history? Cyanosis at birth? Rheumatic fever symptoms?

ATTENDING M.D: He was active and healthy until the age of 14. He had a full-term spontaneous delivery and was not cyanotic at birth. No family history of heart disease. He has not had fever, malaise, joint pain or swelling, epistaxis, syncope, pneumonia, pleurisy, or chest pain.



PART II

VISITING M.D: This is a thick history. Tell me the pertinent laboratory, roentgen, and electrocardiographic findings.

ATTENDING M.D: Electrocardiographic rate 100, PR interval of 0.17 seconds, and right axis deviation at age of 12. The electrocardiogram when he was admitted this time was similar. Urine, hemoglobin, white and red cell counts, serologic tests for syphilis, and sedimentation rate, normal. Serum sodium, 136 mEq. and the chloride 103 mEq. per liter. Nonprotein nitrogen 32 mg., and van den Bergh 2.6 mg. direct, 3.2 total, per 100 cc.

VISITING M.D: *(Examining the patient carefully)* His respirations are slow and normal, there are no localizing neurologic findings to suggest cerebral embolism, nor any pulmonary evidence of acute pulmonary infarction. I note a Grade III apical systolic murmur and a diastolic rumble with presystolic accentuation. I find a high-pitched diastolic blowing in the pulmonary area and diastolic murmur in the left fourth interspace along the sternal border. The liver is enlarged 10 cm. below the midclavicular line and he has severe ankle edema. I note from the chart that cortisone was without effect. Did you believe that this might be a case of rheumatic carditis of long standing?

ATTENDING M.D: I did suspect rheumatic heart disease, particularly after seeing the results of the cardiac catheterization six days ago.

VISITING M.D: Catheterization?

ATTENDING M.D: *(After calling for the roentgenograms)* Yes. No significant difference was found between the volume per cent of oxygen, 11.1, in the vena cava and in the right auricle, 10.5 to 11.7. This is a normal variation. Of course, the hypertrophy in the right side of the heart might be great enough to prevent left-right shunt. No significant difference was noted between the right auricle and the right ventricle and the right pulmonary artery. Here are the roentgenograms.

INTERN: Blood pressure is 100 over 70. Same as before. *(The intern is placing the patient in an oxygen tent.)*

PART III

VISITING M.D: Comparing the films, I find progressive enlargement of the heart, emphysema, large pulmonary arteries. The right ventricle is enormous and the left auricle is large. The right interlobular artery seems to taper to a conical distal end and only a few fine vascular shadows extend into the right lower lobe on the most recent film. This was not evident on previous films. I take it to mean an old pulmonary arterial thrombosis from an embolus. Get a portable chest film, an electrocardiogram, and the sedimentation rate. Check the pulse and blood pressure every fifteen minutes and we'll be back in a little while. *(They retire to the doctors' room just off the ward.)*

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ATTENDING M.D: There is nothing we can do. He looks moribund. I don't know what has happened.

VISITING M.D: His decompensation has progressed unaltered by digitalis therapy all these years. I gather from your early note that the large pulsating pulmonary arteries seen on fluoroscopic examination together with other physical signs made you think of Lutembacher's syndrome, and it might be possible to do mitral valvulotomy.

ATTENDING M.D: Catheterization is against it. Incidentally the pulmonary artery pressure was 160 systolic, 55 diastolic.

VISITING M.D: Very high indeed. Over this long a period the effects of pulmonary hypertension must have materially altered the pulmonary arteries, and the decompensation led to a cardiac cirrhosis.

INTERN: *(Rushing into room)* The patient has just died.

VISITING M.D: This patient, I believe, had rheumatic heart disease with mitral stenosis of a severe degree. One can't say whether he had active rheumatic carditis and pneumonitis, but probably not. I believe he died of a pulmonary embolus.

ATTENDING M.D: But no increase in respiration, no shock?

VISITING M.D: I know. But patients with mitral stenosis are usually in a terminal state for two or three days.

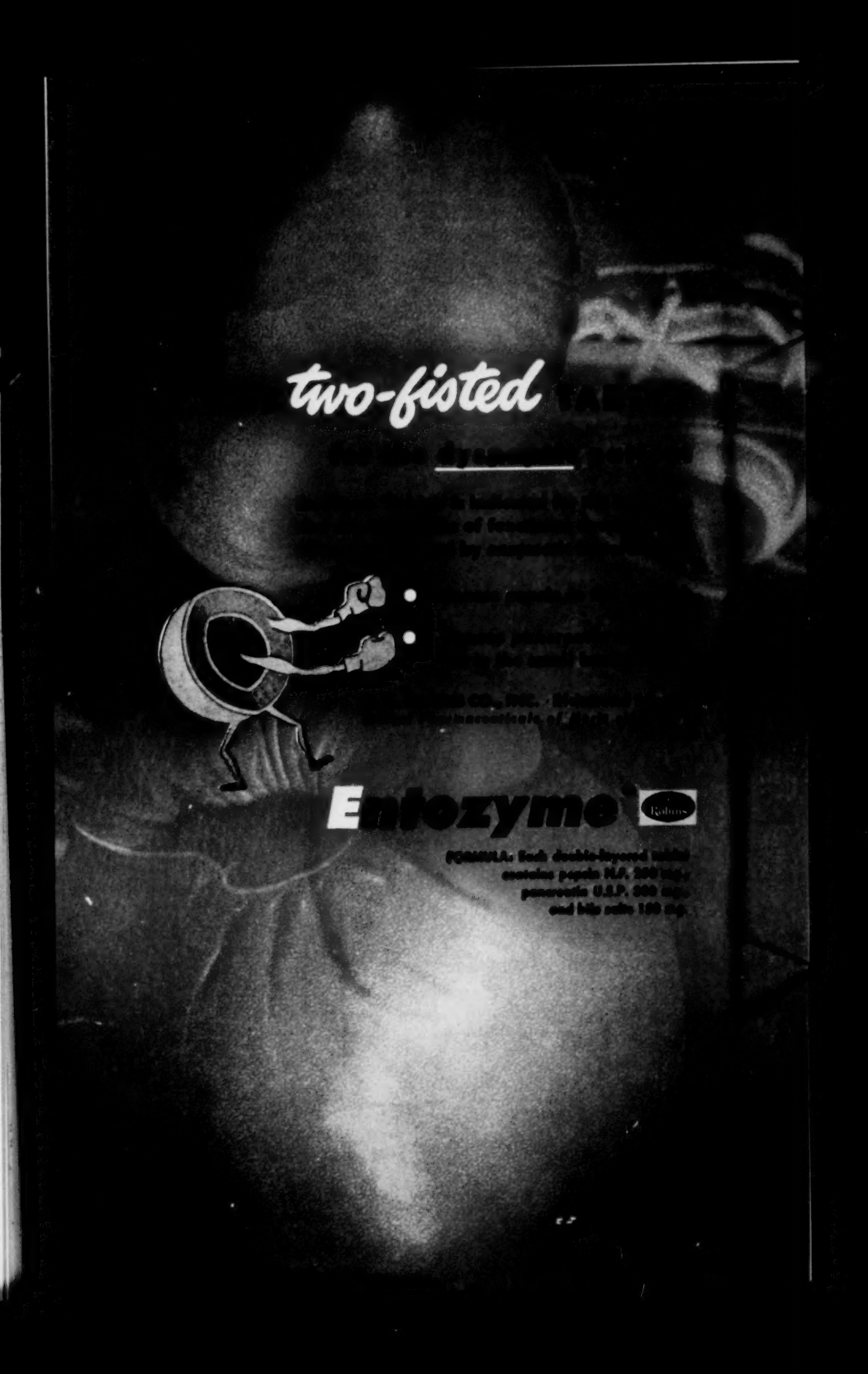
ATTENDING M.D: Cerebral hemorrhage?

VISITING M.D: Possible, but, without localizing signs, a wild guess.

ATTENDING M.D: He must have had a functional pulmonary regurgitation, but the diastolic murmur was not localized in the pulmonic area.

VISITING M.D: A perplexing case. There was the old pulmonary embolism—presumably—but no symptoms to indicate onset. The negative rheumatic history is found in 50% of proved cases of rheumatic heart disease. A loud mitral first sound, a rumbling diastolic murmur, and a loud systolic murmur at the apex mean mitral stenosis. The systolic murmur at the base was not particularly loud and the diastolic murmur in the pulmonic area and the fourth left interspace may be due to a functional pulmonic regurgitation and the effect of severe mitral stenosis.

"Papa, it's raining gallstones!"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The narrow pulse pressure favors this. The loud systolic murmur particularly high toward the base makes me doubt the presence of auricular septal defect. Besides, don't forget that the left auricle was prominent or enlarged in the roentgenogram. In the Lutembacher syndrome—auricular-septal defect and mitral stenosis—the left auricular pressure of mitral stenosis is lessened by the septal defect. Hence auricular enlargement is not found. Well, we have taken up the better part of the morning rounds, and I have to go to my office. If there is a postmortem, call me, please.

PART IV

ATTENDING M.D: *(On the telephone, late that evening)* The postmortem revealed severe old mitral rheumatic heart disease, old pulmonary embolism with superimposed thrombosis of the right pulmonary artery, right cardiac hypertrophy, cirrhosis of the liver, marked pulmonary arteriosclerosis, pulmonary fibrosis—or so it seemed grossly—but no fresh infarct.

VISITING M.D: Any lesion found in the brain?

ATTENDING M.D: No.

VISITING M.D: We don't know the immediate cause of his death. I was wrong and right. It just shows that people with severe cardiac disease, mitral as well as nonmitral, can die suddenly—of heart failure. Very often we are left with no explanation of the terminal event in chronic disease even after autopsy.

Our Office Nurse

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The July 15 winner is

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Glenwood Springs, Colo.

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* * *

While many people can drink coffee or tea without ill-effect—for others, even one to two cups may result in indigestion, hypertension and sleepless nights. *See "Caffein and Peptic Ulcer" by Drs. J. A. Roth, A. C. Ivy, and A. J. Atkinson —A. M. A. Journal, Nov. 25, 1944.*

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Basic Science Briefs

Geriatrics

Calcium Balance in Aged

An average calcium intake of 107 mg. daily is insufficient for elderly men. Several balance periods of a week each were studied for 3 men 66 to 81 years of age by Dr. Morton D. Bogdonoff and associates of the National Institutes of Health, Bethesda, Md., and Baltimore City Hospital, Baltimore. All subjects were free of disorders affecting calcium metabolism except for slight osteoporosis. Calcium balance was negative with a daily ration of 107 mg. and positive with 849 to 2,494 mg., given in natural foods except at the highest level. Nitrogen and phosphorus balances were positive throughout, and storage was essentially unchanged.

Federation Proc. 11:15, 1952.

Endocrinology

Shwartzman Reaction

After treatment with cortisone, a generalized Shwartzman reaction can be elicited by a single intravenous dose of meningococcic or *Serratia marcescens* toxin. Drs. Lewis Thomas and Robert A. Good of the University of Minnesota, Minneapolis, studied effects in rabbits given 25 mg. of the hormone daily for four days, with the provocative dose injected on the third day. In most cases, bilateral cortical necrosis developed in the kidneys and hemorrhages in the lungs, spleen, liver, and gastrointestinal tract. Kidney lesions also appeared after intradermal doses of *S. marcescens* toxin in pretreated animals, indicating absorption from the skin. Both the cortisone-toxin reaction and the usual Shwartzman phenomenon resulting from 2 doses of toxin were prevented by nitrogen mustard.

J. Exper. Med. 95:409-428, 1952.

Oncology

Pleomorphic Tumor Substance

An organism that resembles mycobacteria morphologically and culturally has been isolated from all types of human and animal tumors. This organism is pleomorphic and has a filtrable phase. Dr. Lawrence W. Smith and associates of Presbyterian Hospital, Newark, find that granulomatous lesions which may show proliferation are produced upon injection of the organism into animals. The lesions are usually sarcomatous and most frequently involve lymphoid and reticuloendothelial tissue. Many of the lesions contain cells which have nuclear changes suggestive of cancer. Between 5 and 10% of the growths have frank malignant cell changes which may or may not develop into the type of tumor from which the organism was originally isolated.

Cancer Research 12:298, 1952.

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Short Reports

Urology

Vesical Electromyography

The normal urinary bladder constantly contracts in a regular rhythm accompanied by electropotential changes. An electronic recorder which is described by Dr. William H. Boyce demonstrates clear-cut differences in activity during good health and disease. In all, 105 patients with various ailments were examined at the University of Virginia Hospital, Charlottesville. Two Shedlovsky silver–silver chloride electrodes are inserted into the bladder in a plastic sheath. The electrode carrier has 2 insulated channels and a central tube for removing or injecting fluids. Electrode handles are attached to the lead-in box of a standard Grass electroencephalograph, and an indifferent electrode is applied just above the umbilicus. Respirations are recorded with a bimetallic thermocouple placed before the nares. Examination usually takes fifteen or twenty minutes. Muscle contractions of a sound bladder produce 2.4 diphasic waves per minute, each lasting 4.73 seconds on the average, in 2 phases, labeled A and B. An occasional C phase is seen. Voluntary activity such as an effort to void has a pattern different only in mechanical force. With muscular hypertrophy, electromotive force increases in all phases, especially B and C. Muscular degeneration is indicated by long, quiet intervals, diminished force, and variable basic pattern. The hypoactive neurogenic bladder has slow rhythm and lessened electromotive force. The hyperactive neurogenic type alternates burst of rapid activity with long quiescence.

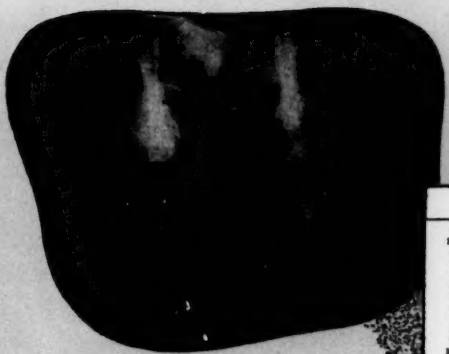
J. Urol. 67:650-671, 1952.

Endocrinology

Diet for Hypertension

Success of a low-salt diet for essential hypertension probably depends on adrenal response. Dr. R. S. Griffith and associates of General Hospital, Indianapolis, restricted 15 patients to 200 mg. of sodium daily, giving cation-anion exchange resins with supplementary potassium when needed. In 8 cases, blood pressure was normal within a month, in 2 less improvement resulted, and in 5 cases none. The best response was associated with adrenal stimulation, indicated by a drop in eosinophils and rise of plasma renin-substrate concentration. Subjects with no fall in blood pressure had no change in eosinophils or renin substrate. After stabilization, normal blood pressure was maintained by a 1.5-gm. sodium diet and exchange resin therapy. The urine sodium of unimproved persons could not be reduced as far as in the responsive group.

Federation Proc. 11:59, 1952.



age	No. examined	No. with scurvy	% with scurvy	No. examined	No. with scurvy	No. examined	No. with scurvy
0-15 da.	300	0	0	174	0	186	0
16-30 da.	98	1	—	41	1	49	0
1 mo.	99	0	0	48	0	51	0
2 mo.	99	3	3.2	24	2	24	0
3 mo.	99	3	4.1	24	2	30	0
4 mo.	79	2	2.5	26	1	53	1
5 mo.	73	12	16.5	25	3	48	9
6 mo.	53	13	24.5	19	3	34	5
7 mo.	54	10	18.5	22	3	33	3
8 mo.	40	5	12.5	18	2	23	3
9 mo.	38	10	26.3	12	4	29	6
10 mo.	41	5	12.2	16	0	25	3
11 mo.	40	3	7.5	13	0	28	3
12-23 mo.	177	3	—	48	1	180	3
Total	1,300	69		546	29	757	40

PREVALENCE OF SCURVY

SCURVY

is more common than many think

Histological examination* of bone structure in 1300 infant post mortems revealed that scurvy occurred more than 10 times as frequently as is usually shown by clinical diagnosis. The most susceptible age is from the fifth through the eleventh month, with approximately 17% of infants exhibiting the histological signs. Over half of the children with scurvy had never received supplemental vitamin C. How easy to prevent, when Florida citrus is so rich in vitamin C content — so convenient, so economical, and so pleasant to take!

* *Bull. Johns Hopkins Hosp. 87:569, 1950.*

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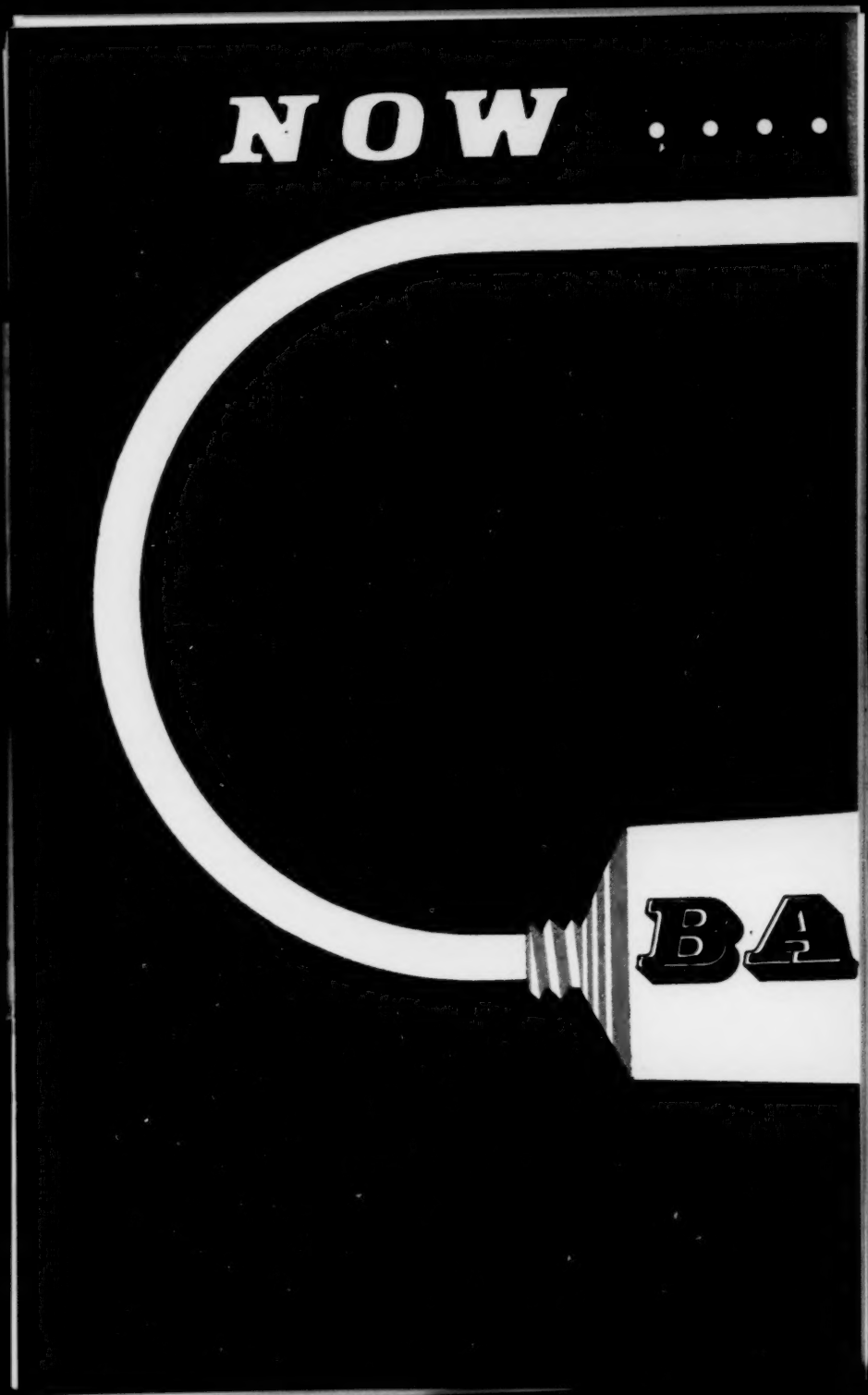
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Organizations

World Fertility Society

The recently organized International Fertility Association now has members in 32 countries and will sponsor the First World Congress on Fertility and Sterility, in conjunction with the American Society for the Study of Sterility. Meetings will be held in New York in May 1953. Information may be obtained from Dr. Abner I. Weisman, 1160 Fifth Ave., New York City.

Neurology

Anticonvulsant Therapy

Epileptic patients who have grand mal attacks despite conventional therapy may benefit from Mysoline. This anticonvulsant (5-phenyl-5-ethyl-hexahydropyrimidine-4, 6-dione), though closely related to phenobarbitone, is of a chemical type not previously employed in therapy. At the David Lewis Epileptic Colony, Warford, England, the number of attacks of all kinds was reduced in 80% of the 40 patients treated and attacks ceased completely in 30%; only 1 patient became worse. All the patients had been receiving various anticonvulsants for a number of years and, at the onset of Mysoline therapy, had primarily grand mal seizures. When convulsions continued to occur, the attacks were less severe and recovery was more rapid. Subjective improvement in mental alertness, work performance, and recreational interest was described by those responding to therapy. Best results were in patients without mental deterioration. Drs. R. Handley and A. S. R. Stewart recommend 1.6 gm. of Mysoline daily in divided amounts as a safe maximum dose. Drowsiness, toxic effects, abnormal blood changes, and hypertrophy of the gums do not occur with doses of this magnitude. Change to Mysoline should be done gradually over a two-week period; 0.25 gm. is added twice daily for three days and then increased by 0.25 gm. every three days until a daily total of 1 gm. is reached. In several cases, 2 gm. has been used daily without untoward effects. Withdrawal of previous treatment should begin on the fourth day of Mysoline therapy and should be complete within two weeks.

Lancet 262:742-744, 1952.

Medical Education

Plan for Interns

A national matching plan, used for the first time in 1952, has eliminated some of the confusion in the search for 10,000 interns from a graduating class of 6,000. During the senior year, medical students apply for any internship desired and visit hospitals of their choice. The candidates and institutions then file confidential ratings with the National Interassociation Committee on Internships. In March, punched rating cards are matched by machine, in most cases with first choices. The plan is now serving about 98% of available hospitals and 95% of this year's graduates.

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Neurology

Epileptic Seizures

Most attacks of epilepsy occur at times of day when eosinophil counts are lowest, indicating that adrenal corticoids may have a precipitating influence. Electroencephalographic tracings lasting four minutes were obtained at ninety-minute intervals for periods of twenty-four hours by Dr. Franz Halberg and associates of the University of Minnesota, Minneapolis, and the State Hospital, Cambridge, Minn. Venous blood for eosinophil counts was withdrawn on completion of tracings. Seizures corresponded with paroxysmal electric discharges well above the average daily level and with low eosinophil values.

Federation Proc. 11:62, 1952.

Diagnosis

Test for Pancreatic Cancer

High antithrombin levels may appear within the first four weeks of obstructive jaundice caused by pancreatic carcinoma, a time when surgery is usually the most effective. Titers may be normal when jaundice has persisted four weeks to four months and be depressed thereafter. The first stage corresponds with rapidly invasive growth and interstitial pancreatitis, the second with healed pancreatitis, and the last with pancreatic fibrosis, insufficiency, and widespread metastases. Values also rise in nonicteric patients with acute interstitial pancreatitis, but rarely with obstructive jaundice due to acute biliary disease, therefore antithrombin determination may aid differential diagnosis. Tests were done in 27 proved cases of pancreatic cancer by Drs. Irving Innerfield and Alfred Angrist of Jewish Memorial Hospital, New York City. The patient's defibrinated plasma may be used as the test substance and standardized topical thrombin as the substrate. After varying intervals of incubation at 37° C., aliquots of the reaction mixture are added to fresh human plasma, and clotting times are recorded. An alternate procedure requires bovine fibrinogen.

Am. J. M. Sc. 223:422-428, 1952.

Surgery

Cortisone and Wound Healing

Opinions conflict as to whether cortisone or ACTH therapy retards wound healing. Nutrition is an important factor, declare Drs. Charles W. Findlay, Jr., and Edward L. Howes of Columbia University, New York City. More than a 20% weight loss from preoperative starvation and protein deficit was necessary to delay healing of sutured incisions in rabbits not given hormones. When weight losses were under 20%, small doses of cortisone slowed tissue repair if the postoperative diet was low in protein, but healing was not affected if the animals were given adequate food. The death rate of wounded starved animals was increased by cortisone. In some instances a false impression of healing was produced by clotted blood which closely imitated granulation tissue.

New England J. Med. 246:597-604, 1952.

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In peptic ulcer

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In hypertension, congestive heart failure and cirrhosis

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Surgery

Nutrition after Gastrectomy

Both fat and protein assimilation in dogs are impaired by total gastrectomy. The most serious factors in malnutrition are probably inadequate mixing of food with pancreatic and biliary secretions, more rapid intestinal movement, and loss of the stomach as a reservoir for food. Dr. Tilden C. Everson of the University of Illinois, Chicago, analyzed 39 postoperative metabolism periods of one week each for 13 dogs. Postoperatively the average fecal excretion of nitrogen was increased from 12.8% of the amount eaten to 41.5%; fat excretion rose from 2.8% to 27.6%.

Surgery 31:511-516, 1952.

Dermatology

Genesis of Psoriasis

Upper respiratory infection, particularly streptococcal throat infection, may be the provocative agent for patients susceptible to psoriasis. In 133 patients with various types of psoriasis, 44% were found to have had recent infection; 75% of which were diseases caused by hemolytic streptococci, such as tonsillitis, rheumatic fever, or polyarthritis. Beta hemolytic streptococci were isolated from tonsillar swabs of 17% of the 133 psoriatic patients. Elevated antistreptolysin titers were found in 33% of the patients. Streptococcal agglutination and staphylococcal antitoxin titers were increased in less than 3%. According to Dr. A. Nørholm-Pedersen of Aarhus University, Denmark, these observations implicate streptococcal infection as the provoking agent. The elevated antistreptolysin titers and the normal streptococcal agglutination suggest that a focal infection is involved, rather than a chronic sepsis. Focal infections are most frequent among young persons and women. Guttate psoriasis shows a similar high incidence in these groups; the first eruption is often associated with focal infection.

Acta dermat-venereol. 32:159-167, 1952.

Cardiology

Venous Pressure

In patients with heart disease, resting venous pressure may be related to blood volume, but pressure changes due to exercise depend more on competence and work load of the right ventricle. Subjects with left ventricular involvement and others with pulmonary disease or mitral stenosis were examined by Dr. E. Brown and associates of the University of California, San Francisco, before, during, and after weight lifting by a foot treadle. In patients with lesions of the left ventricle, the venous pressure rose abnormally only when blood volume exceeded 20% of the predicted standard value. The other patients showed no correspondence between volume and effects of work. The presence and severity of pulmonary hypertension were reflected by the response of venous pressure to exercise in 5 of 6 subjects whose mean pulmonary arterial pressures were 17.5 to 58.5 mm. of mercury.

Federation Proc. 11:17-18, 1952.

The first advance in medical management of hemorrhoids in 25 years

For the hemorrhoid patient who must have RELIEF

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Gastroenterology

Detergents for Peptic Ulcer

Intractable ulceration of stomach or bowel may heal with the aid of detergent complexes. Not only are destructive enzymes inhibited, but total gastric secretion is apparently reduced. Dr. Otto E. Lobstein and associates of Northwestern University and Wesley Memorial Hospital, Chicago, describe use of RD 11, which contains an acid-adsorbing resin and the mono-alkyl sulfuric acid esters of n-dodecanol and n-tetradecanol. The compound relieved all symptoms of gastroduodenal ulcer in 10 of 20 cases after failure of other medication. Grade III ulcerative colitis subsided during therapy in 3 of 10 cases, with no relapse in four to eighteen months of observation. Mucosulf, a combination of sodium alkyl sulfate with commercial gastric mucin, seemed as effective as RD 11.

Gastroenterology 20:474-484, 1952.

Pediatrics

Examining Pad for Infants

If small infants are placed on a comfortable supporting pad, examination is facilitated and the child is not likely to cry. A 24-by-16-in. examining pad, conforming to an infant's body, is described by Dr. G. E. Stafford of Lincoln, Neb. Foam latex 1 in. thick is laid on a light plywood base. The sides are built up with two additional layers of latex to form a lengthwise depression the width of the infant's buttocks and shoulders, which cradles the baby and discourages rolling. Fine-grained plastic of any desired color completely covers the pad. No seams are placed on the upper surface. Any experienced upholsterer can make the cushion easily and economically.

J. Pediat. 40:339, 1952.

Neurosurgery

Catatonic Stupor

In therapy of schizophrenia, injection of synaptic depressors into the cerebral ventricles may not only be less mutilating but also more effective than leukotomy. Treatment is based on the belief that certain mental diseases are caused by autonomic nervous imbalance within the diencephalon. The disorder may be allied to sympathicotonic reactions of fight, fright, flight, and anger, or Meduna's oneirophrenia. Dr. Stephen L. Sherwood of the Middlesex Hospital, London, brought 3 patients out of catatonic stupor, using 2 to 4 drugs in each case. Injections were made through 1 of 2 bifrontal burr holes or an old leukotomy trephine opening and a second needle was inserted on the other side to prevent rise in intracranial pressure. Procaine or cholinesterase was given in the smallest effective amounts, pentamethonium iodide in doses of 20 mg. for 70 kg. of body weight, and flaxedil at the dose of 40 mg. per 70 kg. The greatest improvement was produced by cholinesterase and pentamethonium iodide.

Brain 75:68-75, 1952.

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Oncology

Radiosensitivity Increased

Diets free of vitamin C increase the radiosensitivity of Crocker rat carcinoma. Dr. Theodore L. Miller and associates of Florida Southern College, Lakeland, believe that 3,000 or 5,000 r is as effective on vitamin C–deficient rat tumors as 8,000 or 10,000 r is on animals with ordinary ascorbic acid levels. When rats eat normal diets, 3,000 or 5,000 r produces partial destruction of 18-cm. tumors; tumors of 19 to 20 cm. on rats deprived of ascorbic acid are completely destroyed by contact radiation of 3,000 or 5,000 r. All but 1 of 60 rats who were deficient in vitamin C and receiving radiation therapy survived.

Cancer Research 12:284, 1952.

Diagnosis

Test for Coronary Disease

The phospholipid-cholesterol ratio is helpful in detection of coronary atherosclerosis. A value under 1 was observed in 66% of 124 patients with known involvement, in 24% of a large group with other chronic diseases such as tuberculosis or nephritis, and in 10% of healthy individuals. In some of the coronary cases, Dr. Lester M. Morrison of the College of Medical Evangelists, Los Angeles, obtained normal values on one day and 3 or 4 low readings in later tests at intervals of a few days. In 2 instances, individuals with very low phospholipid-cholesterol ratios but normal electrocardiograms and no cardiac symptoms had coronary thrombosis a month after examination. Total fasting serum cholesterol was estimated by the Sperry-Schoenheimer or by the Kingsley-Schaeffert method, phospholipids approximately by the technic of Fiske and Subbarow. When the phospholipid-cholesterol ratio test was used in combination with cholesterol esterase and saponin extraction tests, positive results in 2 out of 3 of these tests usually indicated a disorder of serum lipoprotein colloidal equilibrium for patients with coronary disease.

J. Lab. & Clin. Med. 39:550-555, 1952.

Urology

ACTH in Nephrosis

Edema is eliminated and other abnormalities accompanying nephrosis improve in many cases after treatment with ACTH. The most important changes preceding or accompanying the edema loss are increasing renal clearance of the creatinine, urine flow, and serum sodium concentration and diminishing sodium-retaining activity of the urinary corticoids. Dr. John A. Luetscher, Jr., and associates of Stanford University, San Francisco, believe that the parallel changes in edema and proteinuria, first increasing and later decreasing simultaneously, are regulated by closely related mechanisms. The improvement is usually maintained for several months, then recurrence of the nephrotic syndrome generally appears, sometimes after a slight infection and at other times without obvious cause.

J. Clin. Investigation 30:1530-1541, 1951.

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Status of Federal Health Bills

Principal proposals in the health fields and status in Congress on June 1.

S.337. Federal aid to medical, dental, and nursing education. On Senate calendar. H.R.2707. Similar to S.337. In House committee.

H.R.910. Federal aid to nursing education. Hearings but committee voted to table the bill.

H.R.2152. Federal aid for the construction and enlargement of medical schools. In committee.

H.R.2511. Commission for the study of medical education. In committee.

S.445. Federal aid to local public health units. Passed Senate but no House action. H.R.274. Similar to S.445. Hearings but no action.

S.1245 and H.R.4176. Emergency Maternity and Infant Care program. H.R.4176 in committee. S.2337. EMIC program plus hospitalization of military dependents. Senate hearings on S.1245 and S.2337 held in March and reopened to take more testimony but no action. H.R.342. Hospitalization and medical care of military dependents. In committee.

H.R.5426. To rewrite the military reserve component laws. Passed House; Senate committee has held hearings.

H.R.348. Barbiturate control under federal narcotic laws. In March, for the second time, the committee held open hearings to discuss the entire subject of barbiturate control. H.R.5718. National Drug Commission. In committee.

S.1875. Government loans to cooperative and nonprofit health groups. In committee.

H.R.27 and H.R.54. National Compulsory Health Insurance. In committee. H.R.136. Committee to study health insurance. In committee.

S.1140, H.R.3305, and H.R.3688. Independent Department of Health. Senate committee held hearings in February and March. No House action.

H.R.3021. Social Security Act amendment to provide insurance for the totally disabled. In committee. H.R.4943. Extension of Social Security benefits to dentists. In committee.

H.R.313. Construction of 16,000 additional VA beds. Passed House, no Senate action.

S.1235. Authorization for chiropractic care of veterans. In committee. H.R.1368. Authorization for chiropractors in VA Department of Medicine and Surgery. In committee.

H.R.14 and 5 similar bills. Allowance of increase in tax deductions for medical care costs. In committee.

H.R.35 and 13 similar bills. Creation of an independent agency on physically handicapped. In committee.

S.1328. Survey of sickness. Hearings but no action.

H.R.238 and 9 similar bills. Creation of a committee on aging. In committee.

S.3019. Continuation of $100 a month extra pay to physician members of Armed Forces. Reported out of com mittee and pending on Senate calender

H.R.5678. Liberalizing of U.S. immigration regulations to allow increase in number of professional immigrants. Passed House. S.2550, on same subject has passed Senate. Bill now in conference.

S.3001 and H.R.7484 and H.R.7485. Hospitalization-at-65 under Social Security. No action.

H.R.7320. Medical and dental care to children of deceased veterans.

S.2552. Equal rights to women physicians, dentists, veterinarians in the Armed Services. Passed both houses with amendments. Now in conference.

H.R.7800. Increasing Social Security payments and liberalizing other benefits (including a section on disability); on Senate calendar following refusal of House to consider it under suspension of rules.

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Current Books & Pamphlets

This catalogue is compiled from all available sources, American and foreign, to insure a complete listing of the month's releases.

Medicine

YOUR DIABETES; A COMPLETE MANUAL FOR PATIENTS *by* Herbert Pollack *and* M. V. Krause. 2d ed. 212 pp. Harper & Bros. $3

WISSENSCHAFTSTHEORETISCHE AUFSÄTZE FÜR ÄRZTE *by* G. Ricker. 2d ed. 82 pp. Georg Thieme, Stuttgart. 5.70 DM.

RHEUMATIC DISEASES *prepared by* American Rheumatism Association. 449 pp., ill. W. B. Saunders Co., Philadelphia. $12

Surgery

TRAITEMENT CHIRURGICAL DU CANCER DU RECTUM *by* François D'Allaines *et al.* 2d ed. 252 pp., ill. Éditions Médicales Flammarion, Paris. 575 fr.

THE THORACIC SURGICAL PATIENT *by* Lew A. Hochberg. 367 pp. Grune & Stratton, New York City. $8.75

CLEFT LIP AND PALATE *by* William G. Holdsworth. 126 pp., ill. William Heinemann Medical Books, London. 35*s.*; Grune & Stratton, New York City. $5.50

Orthopedics

POST-GRADUATE LECTURES ON ORTHOPEDIC DIAGNOSIS AND INDICATIONS, VOL. III *by* Arthur Steindler. 270 pp., ill. Charles C Thomas, Springfield, Ill. $8.75

THE 1951 YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY *edited by* Edward L. Compere. 380 pp., ill. Year Book Publishers, Chicago. $5.50

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Psychiatry

GROUP TREATMENT IN PSYCHOTHERAPY: A REPORT OF EXPERIENCE *by* Robert G. Hinckley *and* Lydia M. Hermann. 136 pp. University of Minnesota Press, Minneapolis. $3

GESETZE UND SINN DES TRAÜMENS *by* K. Leonhard. 2d ed. 146 pp. Georg Thieme, Stuttgart. 11.70 DM.

BATTLE FOR MENTAL HEALTH *by* James Clark Moloney. 105 pp. Philosophical Library, New York City. $3.50

PRINCIPLES AND PRACTICE OF THE RORSCHACH PERSONALITY TEST *by* Walter Ernest Richard Mons. 2d ed. 176 pp., ill. J. B. Lippincott Co., Philadelphia. $4

THEMATIC TEST ANALYSIS *edited by* Edwin S. Shneidman *et al.* 320 pp., ill. Grune & Stratton, New York City. $8.75

Neurology

THE 1951 YEAR BOOK OF NEUROLOGY AND PSYCHIATRY *edited by* Roland P. Mackay *and* Nolan D. C. Lewis. 556 pp., ill. Year Book Publishers, Chicago. $5.50

Pediatrics

CHILDREN WHO HATE: THE DISORGANIZATION AND BREAKDOWN OF BEHAVIOR CONTROLS *by* Fritz Redl *and* David Wineman. 253 pp.. Free Press, Glencoe, Ill. $3.50

Gynecology & Obstetrics

THE MENOPAUSE *by* Lena Levine *and* Beka Doherty. 198 pp. Random House, New York City. $2.75

HEREDITY IN UTERINE CANCER *by* Douglas P. Murphy. 128 pp. Harvard University Press, Cambridge, Mass. $2.50

FERTILITY IN MEN AND WOMEN: THE HOW AND WHY OF HAVING CHILDREN *by* James Alan Rosen. 177 pp. Coward-McCann, Inc., New York City. $3

A TEXTBOOK OF GYNAECOLOGY *by* Wilfred Shaw. 6th ed. 672 pp., ill. J. & A. Churchill, London. 27*s.* 6*d.*

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ESSENTIALS OF NEUROSURGERY *by* Leslie Claremont Oliver. 198 pp. H. K. Lewis & Co., London. 25*s*.

Electrocardiography

SPATIAL VECTORCARDIOGRAPHY *by* Arthur Grishman *and* Leonard Scherlis. 217 pp., ill. W. B. Saunders Co., Philadelphia. $6

KLINISCHE ELEKTROKARDIOGRAPHIE *by* Max Holzmann. 2d ed. 652 pp., ill. George Thieme, Stuttgart. 69.60 DM.

Genetics

GENETICS IN THE TWENTIETH CENTURY: ESSAYS ON THE PROGRESS OF GENETICS DURING ITS FIRST FIFTY YEARS *edited by* Leslie Clarence Dunn. 634 pp., ill. Macmillan Co., New York City. $5

THE PRINCIPLES OF HEREDITY *by* Laurence H. Snyder. 4th ed. 515 pp., ill. D. C. Heath & Co., Boston. $4.75

Endocrinology

THE PRACTICE OF ENDOCRINOLOGY *by* Raymond Greene. 2d ed. 416 pp., ill. Eyre & Spottiswoode, London. 65*s*.; J. B. Lippincott, Philadelphia. $12.50

ENDOCRINE FUNCTIONS OF THE PANCREAS *by* Bernard Zimmermann. 96 pp., ill. Charles C Thomas, Springfield, Ill. $2.50

Geriatrics

SHOULD I RETIRE? *by* George Heinricks Preston. 181 pp. Rinehart & Co., New York City. $2.50

THE BEST IS YET TO BE *by* William Ganson Rose. 212 pp. Austin-Phelps, Inc., New York City. $3.50

YOU AND YOUR AGING PARENTS *by* Edith Mendel Stern *and* Mabel Ross. 212 pp. A. A. Wyn, New York City. $2.75

SKILL AND AGE: AN EXPERIMENTAL APPROACH *by* Alan Traviss Welford *et al.* 161 pp. Oxford University Press, London. 8*s*. 6*d*.; New York City. $1.75

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Worth Seeing

I was working in the out-patient clinic of a charity hospital where we saw some odd characters. One evening a grimy fellow came in to have a wart removed. It was on his hand and was causing him trouble when he worked. I suggested that first he wash his hands.

"Both of them?" he asked.

"No," I answered, "just one. I want to see how you do it."

—J.T.

"I keep hearing voices, but it's always my wife's."

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1. Bradley, J. E., et al.: J. Pediat. 38:41, 1951; idem: Amer. Acad. Pediat., meeting Oct. 16, 1951.

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"No," replied the attendant, "we have no officers at all in this ward."—J.F.T.

"I see by the paper that a Hollywood physician has named his estate 'Bedside Manor.'"—J.F.T.

Not Set Yet

This story was told to me by my receptionist. Mrs. Talsrud had come in to make an appointment. There were a couple of hours available and the receptionist asked which would be most convenient.

"Well, that depends," said Mrs. Talsrud. "You see I have been having trouble with my sitter."

"In that case," replied the receptionist, "perhaps you had better see Dr. L, he's the proctologist, you know."

"Oh, dear, I didn't mean that I have trouble sitting down," laughed the woman. "I mean that I can't always get someone to sit with the children when I come downtown."—J.T.

"Wouldn't it be wonderful if it would be a wrong number sometime?"

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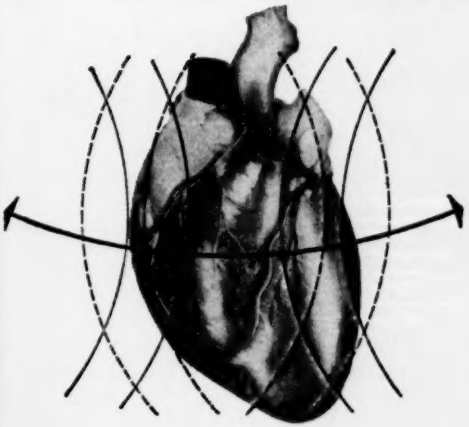
In cardiac decompensation



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